

User Guide

MDW Data Conversion Tool

Data Conversion Tool (DCT)

Overview

The MDW Data Conversion Tool (DCT) is a user friendly tool which will allow users to move data from their existing database into MDW. It will provide the user the ability to select which data they would like to move, map the data to MDW, and then provide feedback if the transfer of data was successfully moved or produce an error list report for items that need to be fixed before the upload of data to MDW will proceed.

Requirements:

- A stable or high speed internet connection
- Login to MDW with Asset Manager Access
- Connection and/or password for the Data Destination if required
- Access (administrator permissions on the computer) to install the DCT
- If you need to install DCT follow [“Installing DCT”](#)

The screenshot displays the ASI Data Conversion Tool (DCT) interface. The top menu bar includes File, Data, Diagram, Conversion, and Style. Below the menu is a toolbar with icons for Access, Excel, and MDW, along with a 'More' dropdown. The main workspace is divided into three sections: Objects, Mapping, and Data.

Objects: A list of data sources and destinations, including Data Destination, Data Providers, and Tasks.

Mapping: A diagram showing the mapping of data from the source (left) to the destination (right). The source is a table with columns: Area_ID, Area, Area_Type, Area_Inst, Area_Name, Area_Maintenance_Co, Area_Status, Location_Ref_Type, Classification, Existing_Road_Class, Maintenance_Class, Number_Lanes, Special_Designation, Speed_Limit, Traffic_Status, and Length. The destination is a table with columns: Location_Ref_Type, Classification, Existing_Road_Class, Maintenance_Class, Number_Lanes, Special_Designation, Speed_Limit, Traffic_Status, and Length. The mapping is shown as a series of arrows connecting the source columns to the destination columns.

Data: A table showing the data being converted. The table has the following columns: Location_Ref_Type, Classification, Existing_Road_Class, Maintenance_Class, Number_Lanes, Special_Designation, Speed_Limit, Traffic_Status, and Length. The data is as follows:

Location_Ref_Type	Classification	Existing_Road_Class	Maintenance_Class	Number_Lanes	Special_Designation	Speed_Limit	Traffic_Status	Length
BLOCK	Local	400	5	2	NSD	50	2W	626.0
BLOCK	Local		6	1	NSD	50	2W	53.2
BLOCK	Local	300	5	2	NSD	50	2W	358.0

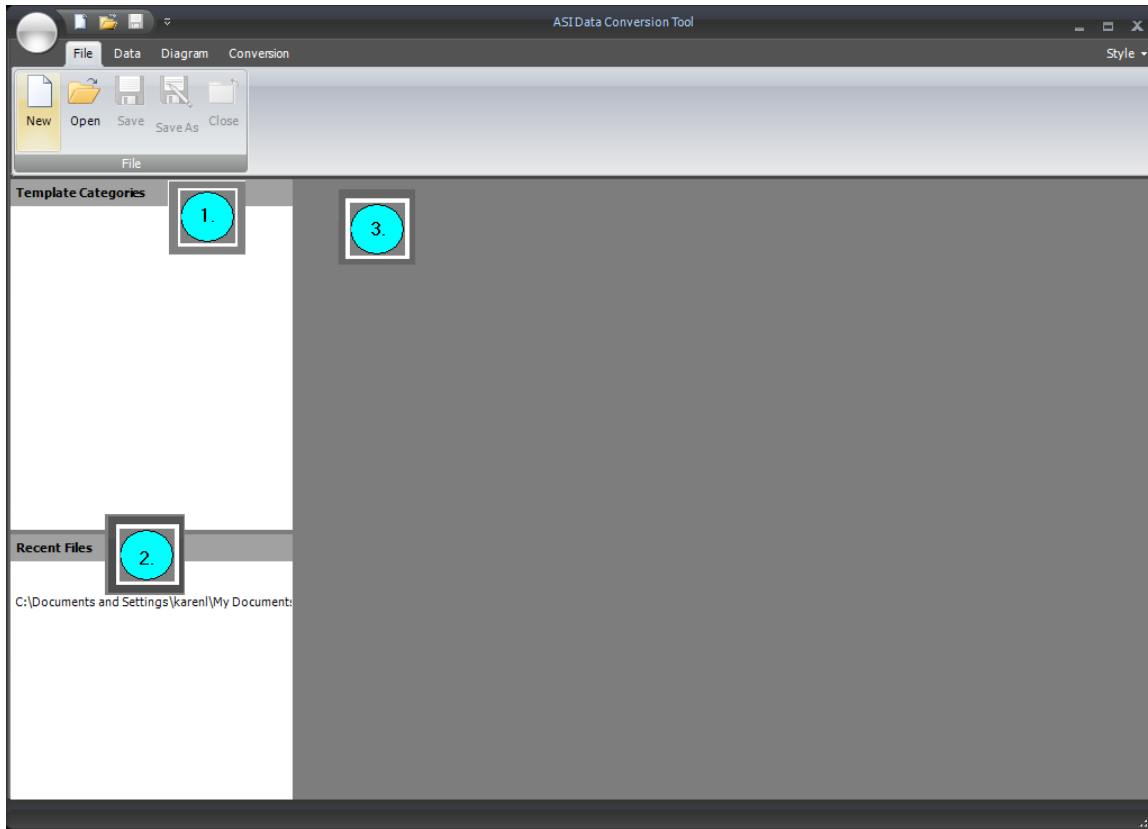
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Navigating the Data Conversion Tool

When logging into the DCT; the following screen will be displayed.

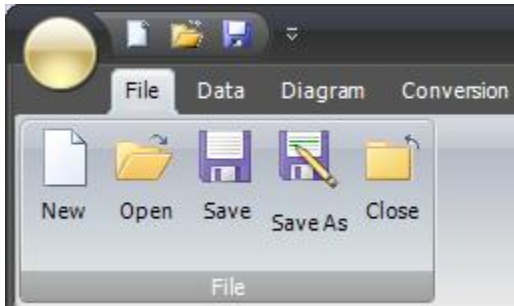


1. **Template Categories** allows users to setup folders through Windows file system to help locate templates easily by their category. Clicking a template category will display all templates associated to the selected template category.
2. **Recent Files** displays latest projects opened or used by the DCT application. The list is arranged in order by most recent to least recent used project files. Double Clicking on the recent file will open the selected project.
3. **Templates** belonging to the selected category will be displayed here. If no category is selected (i.e. when the application first opens) this section will not be displayed. Template Displays the Name of the selected template. This area does not display if no templates are selected.

DCT Work Area

File Tab

Contains commands for creating, opening, closing, and saving a projects.



New: Creates new data conversion project

Open: Opens existing data conversion project (e.g.: “**roads.adct**”)

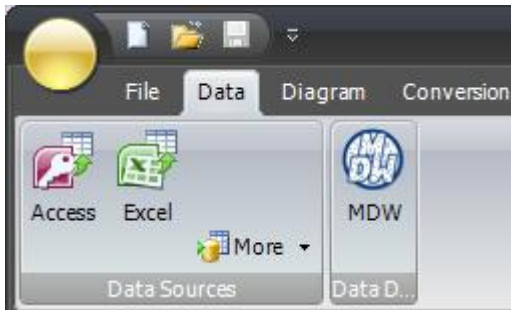
Save: Newly created and existing project changes can be saved

Save As: Saving a project to a new location or saving the project under a new name

Close: Closes the current project

Data Tab

User will make the connection to the Data Provider and Data Destination for the project.



Access, Excel Data Source, or More: Provides the ability to locate and create a connection to the data.

MDW Data Destination: Creates a secured connection to the selected Area MDW Database for Data Load.

Diagram Tab

The diagram provides the ability to hide/show objects, zoom, add tasks, and draw connectors – these commands are necessary to map the data to MDW.

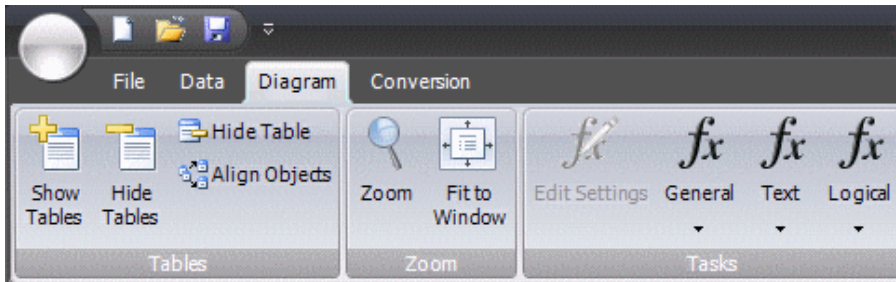


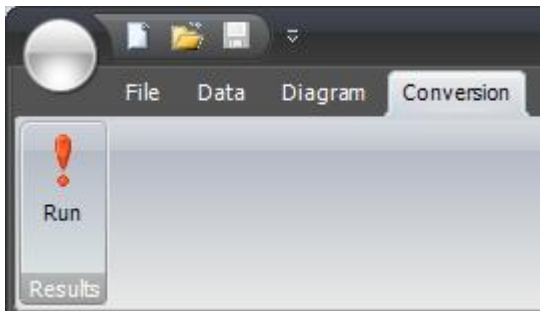
Table: Provides the ability to Show all tables, Hide a Table, and Arrange the Data Provider tables, Data Destination Tables, and Tasks associated to the tables.

Zoom: Gives the ability to select the desired view of the mapping from 10% to 400% and to fit all mappings into 1 screen view.

Tasks: Connects the data to the desired location in MDW. Text changes can be made before the data moves to MDW (e.g.: Change all asset status to upper case), only data with certain criteria can be selected to be moved, and other general basic mapping tasks can be created.

Conversion Tab

Contains commands for performing the conversion.



Run: Completes the conversion into MDW or provides an error report if the conversion fails.

Setting the DCT Screen Color

Provides the ability to select the color you would like to work in within the Data Conversion Tool.

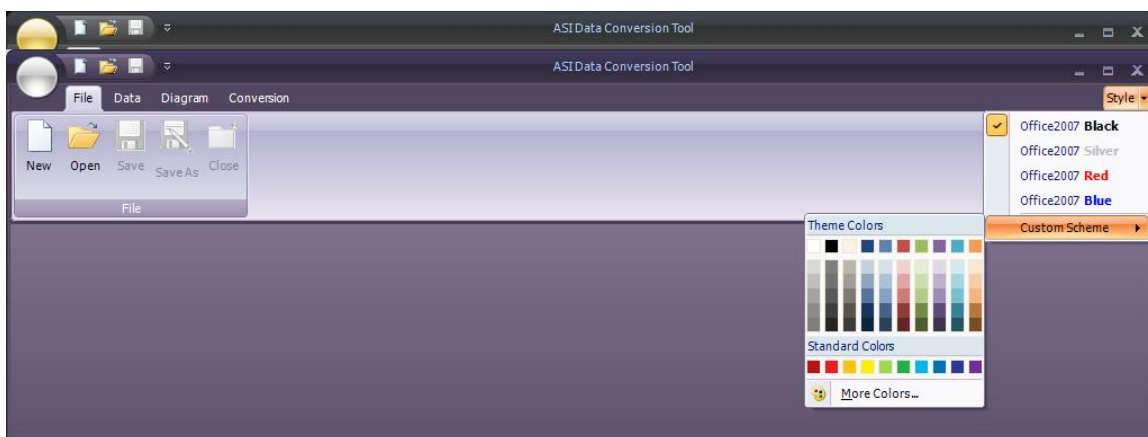
Styles

Clicking on “**Style**” will provide the user the ability to change the color of DCT.

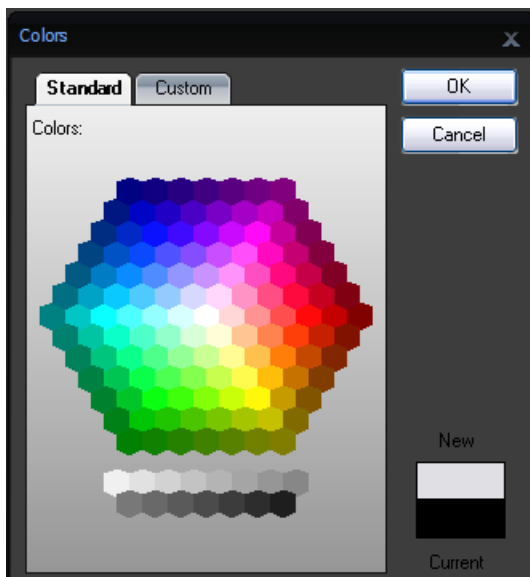
There are 4 Office 2007 colors:

- **Black**
- **Silver**
- **Blue**
- **Red**

Click **Custom Scheme** for more color selections



Click More Colors to select a color from a color pallet.



Using the DCT (Data Conversion Tool)

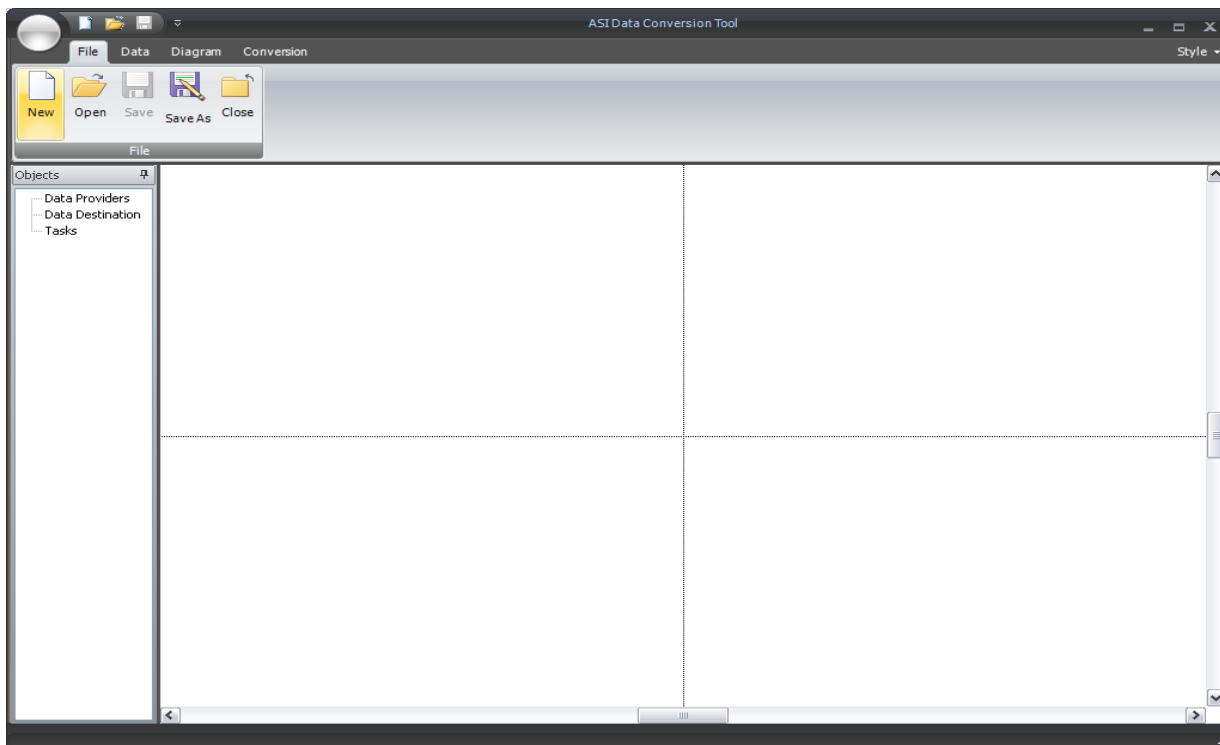
To begin using each area of the application we will now explain in full detail each tab and the steps required to complete the task to ensure your conversion is successful.

Opening and Closing DCT Project

Users will be able to create a new project, open an existing project, save a project and close the current project.

Creating a New Project

Every data migration using the Data Conversion Tool will require a new project. To create a new Project:



Saving a Project

Saving a New Project will allow you to begin the mapping process, save the project, and then close the project. This will allow you to continue the mapping process, make changes to the mapping, and update the mappings when required.

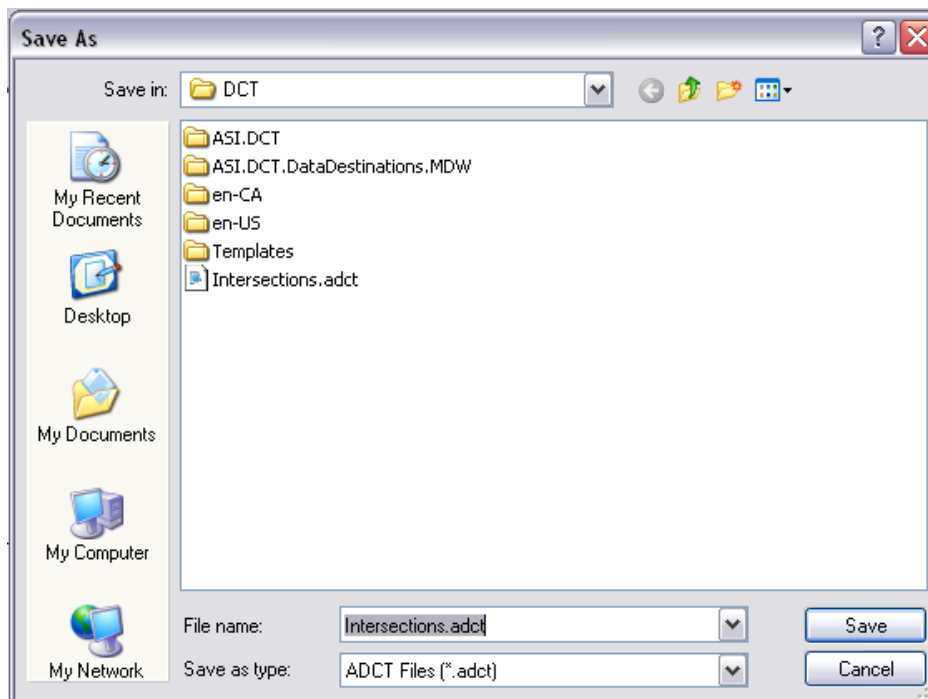


Clicking **Save** will automatically save your project to the default location that was setup during installation. Most Default location will be “C:\Program Files\ASI\DCT\xxxxxx.adct”

Using Save As



Step 1 To select or change the location of where the project should be saved to **click Save As**.

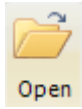


Step 2 Select the file location for your project.

Step 3 Enter the project name in the “File Name” text box.

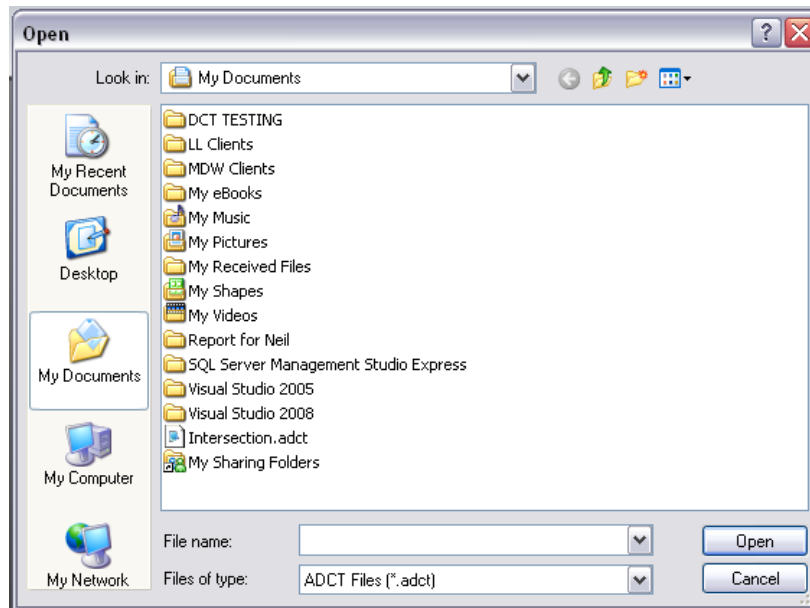
Step 4 Click the save button and the project will be save to the selected location. All project will be stored with a “.adct” file extension.

Opening an Existing Project



Step 1 Click

Step 2 Locate and select your “xxxx.adct” file.



Step 3 Click Open and the selected “xxxx.adct” file will open to continue the conversion process.

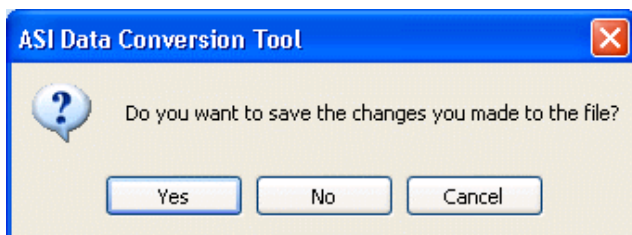
Note: When opening an existing project, if any changes have been made to the source data, the data provider diagram will be automatically updated.

Note: When opening an exiting project, if any changes have been made to the MDW data, the data destination diagram will be automatically updated.

Closing the Current Project

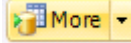


Click **Close** and if the project was saved or no changes were made to the project from when it was opened, the project will close. If the project was changed you will presented with the following screen.



- Click “**Yes**” so your changes will be included.
- Click “**No**” if the changes you made should not be captured.
- Click “**Cancel**” if you would like to continue working with this project and would not like to close it at this time

Opening Data Providers & Data Destinations

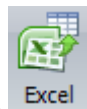
Currently the application will open Excel multi tabular spreadsheets and Access Databases. To see more Data Providers that will be added in the future click  to view this list.

Each table in Access or each Worksheet in the Excel will be displayed as a table in DCT with the same name.

Opening a Data Provider

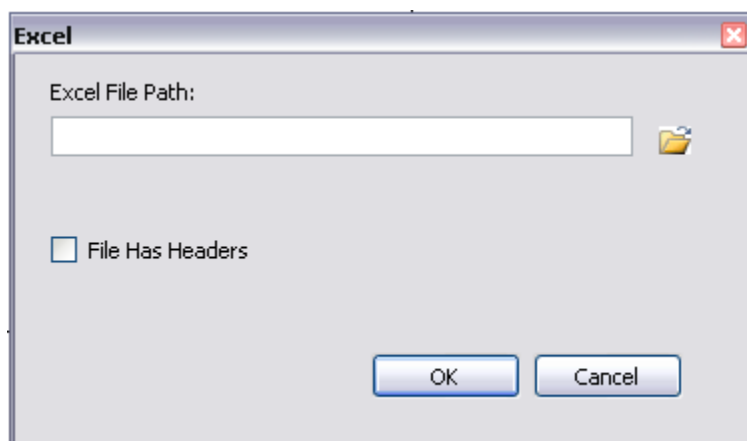
The **Data Provider** in the DCT is where the data is currently stored. Ensure the data has been cleaned up and is ready for the migration process before connecting it to the DCT. Currently, the DCT application is able to open Access Databases and Multi Tabular Excel Workbooks.

Excel



Step 1 Click on Excel icon.

Step 2 Click the File Folder and find the location of the Excel Workbook.



Step 3 If the Excel Document has a title row, **Select “File Has Headers”**. These will then be displayed on the DCT Work Area. This row will also be ignored during the conversion process.

Step 4 Click OK to open the Excel Data Provider

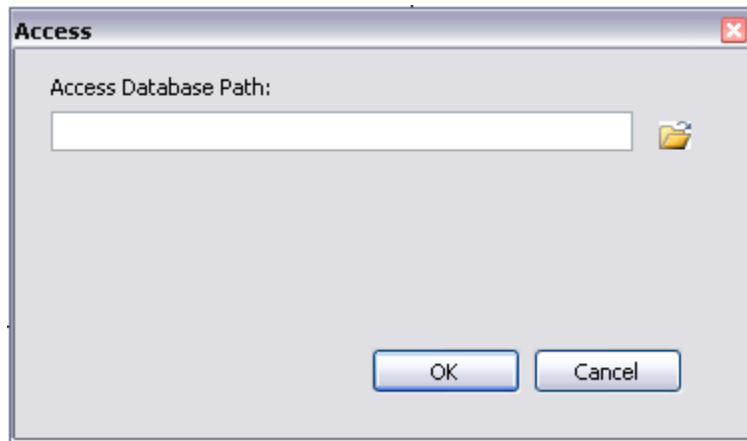
Step 5 Select the Sheet in the Excel Data Provider where the data is located and click Show to open the Excel Data Provider.

Access Database



Step 1 Click on Access icon.

Step 2 Click the File Folder and find the location of the Access Database.



Step 3 If the Excel Document has a title row, **select** “File Has Headers”. The headers will then be displayed on the DCT Work Area. This row will also be ignored during the conversion process.

Step 4 Click OK to open the Excel Data Provider

Opening a Data Destination

The DCT application is currently connecting to the MDW (Municipal Data Works) Database for users to upload Municipal Assets information into MDW like roads data, facilities data, sewer & water data, equipment data and many other asset types.

To create the connection to MDW, you will need to have an existing account to MDW and Asset Manager security access to your area upload information to MDW.

To open your connection to MDW



Step 1 Click MDW icon

Step 2 Now you will need to enter your data

A screenshot of a software window titled 'MDW'. It contains several input fields and two dropdown menus. The fields are labeled 'Web Service Url', 'User Name', and 'Password'. The 'Area' dropdown menu is set to 'DCT Testing'. The 'Asset Type' dropdown menu is open, showing a list of options: 'Signalized Intersection', 'Shrub', 'Sidewalk', 'Sidewalk (Approaches)', 'Sidewalk / Curbs', 'Sidewalk and Medians', 'Sign', 'Signalized Intersection', and 'Signs'. The 'Signalized Intersection' option is currently selected and highlighted.

1. **Web Services URL:** Please enter the path to your MDW Web Service.
2. **User Name:** Will be your email address and it would be the same as the one you use to access MDW.
3. **Password:** Will be the same as your MDW password
4. **Area:** Will be the same as MDW. When you click the drop down it will display the list of “areas” you have access too.
5. **Asset Type:** Each Asset Type will need to have a separate data upload and project created. Select from the drop down list the Asset Type you will be uploading.

Step 3 Once the information has been entered, click **OK**.

Step 4 Select the Data Destination Tables you wish to be displayed to map your data and select Show to connect to MDW.

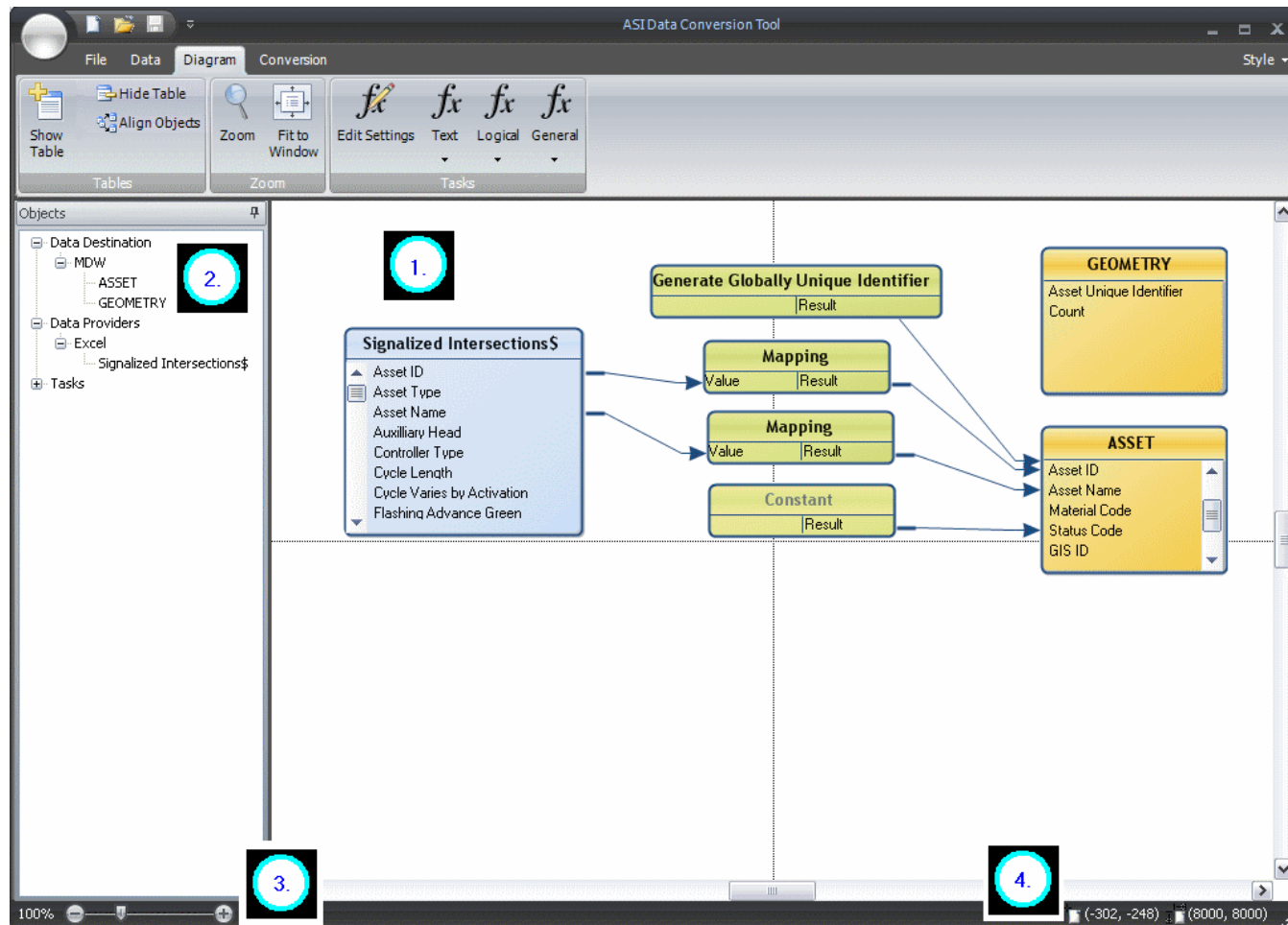
Show Table ✕

☐ Data Destination

- ☒ Asset
- ☐ Attribute
- ☐ Business Group
- ☐ Condition
- ☐ Surrounding
- ☐ Geometry
- ☐ Lifecycle Event
- ☐ Lifecycle Event Detail
- ☐ Condition Detail
- ☐ Block
- ☐ Location Linear Reference
- ☐ Location Point Reference
- ☐ Location Description
- ☐ Location Coordinate
- ☐ Road Name

Mapping Your Data

To begin mapping your data in MDW, click on the **Diagram Tab** and you will see the mapping tasks and the mapping work space to begin your process to moving you data into MDW.

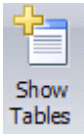


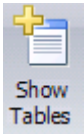
1. **Mapping Work Space:** Provides the ability to link the Data Provider and Data Destination using tasks. You will see Open Data Provider tables, Data Destination tables, and the mapping tasks associated in linking these together.
2. **Panel View:** Displays the open Data Destination tables, Data Provider tables, and Tasks in a panel view
3. **Diagram Size:** Currently the diagram is set 100%, this can be changes from 10% - 400% depending on how many tables need to be viewed.
4. **Pointer Location:** Displays screen size and mouse pointer location.

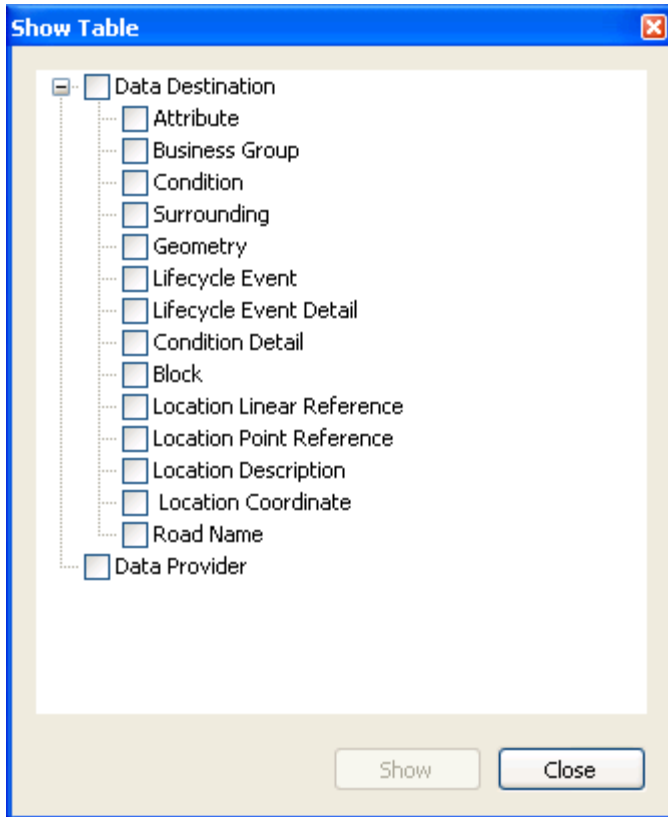
Tables Actions

Provides ways for you to manipulate your view of tables to make it easier to see your diagram and map your data. You are able to select multiple Data Provider Tables and multiple Data Destination tables as required.

Show Table



Click  provides a text box displaying all hidden tables.

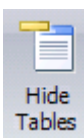


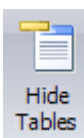
To display a hidden table on the Mapping Work Space select the table in the text box and click Show. The table now appears on the Mapping Work Space.

Hide a Single Table

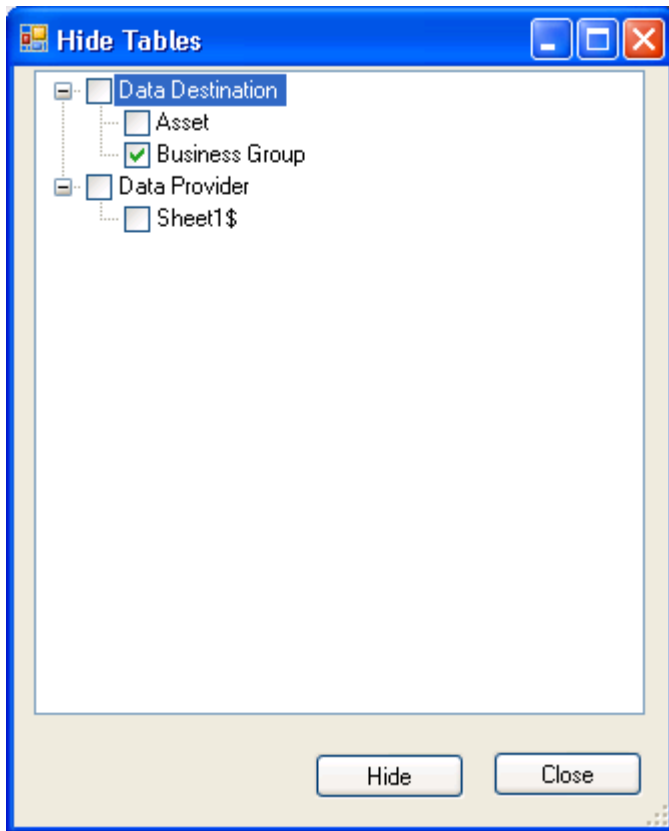
Select a **Table** and Click  and the table will be hidden from the Diagram Work Space.

Hide Multiple Tables

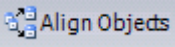


Click  provides a text box displaying all tables on the Mapping Work Space.

To hide a table on the Mapping Work Space, select the table in the text box and click Hide. The table is now removed from the Mapping Work Space.

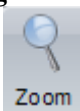


Align Objects

Click  to arrange the Data Provider Tables in vertical line, then the Tasks in a vertical line, and then Data Destination Tables in a vertical line.

Zooming within the Diagram

Zooming



Clicking  will allow you to expand your diagram work space to 400% or reduce your workspace to 10%.

Fit to Window



Clicking  will shrink the Diagram Work Space so you will see all mappings

Diagram Operations

Text Task Operations

Format Date: Provides the ability to format the Data from current way to the accepted requirement for MDW

Date Format String

To Upper Case: Changes all text in the column to Upper Case before importing it to MDW. The source will be from the Data Source Information and linked Value, it will then be all changed to an upper case, and then updated to MDW. The result will be mapped to MDW Data Schema.

To Upper Case	
Value	Result

Concatenate: Allow to columns to be joined together and inserted in one location in MDW.

Conjunction

To Lower Case: Changes all text in the column to Lower Case before importing it to MDW. The source will be from the Data Source Information and linked Value, it will then be all changed to an lower case, and then updated to MDW. The result will be mapped to MDW Data Schema.

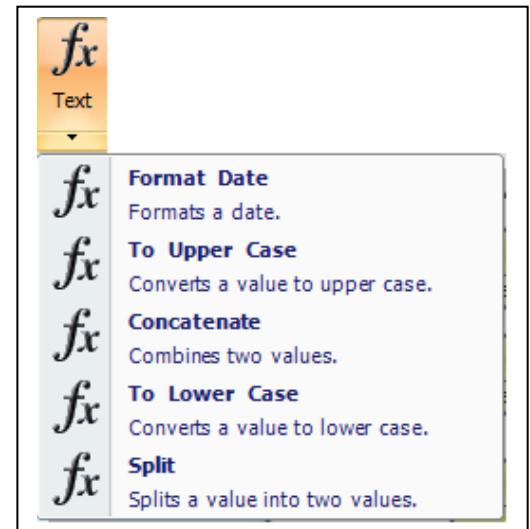
To Lower Case	
Value	Result

Split: Split a column using an identifying splitter to 2 locations in MDW.

Split Settings

☐ Split By Position
☒ Split By Character(s)

Split Character(s)
☐ Remove Delimiting Character(s)



Logical Task Operations

Not Equal To: Will compare value 1 and Value 2 and will load the value that do now equals each other.

Equal To or Less Than: Will compare value 1 and Value 2 and will load the lesser of the two data values and the value that equals each other.

Or: Value 1 or Value 2 could be loaded depend on validity of the data that exists in the value.

Or	
Value 1	Result
Value 2	

Equal To: Two data sources will be checked to see if they are equal and if they are, they will be loaded to MDW.

Not: All information that does not contain the enter value will not be added to MDW.

Not	
Value 2	Result

Equal To or Greater Than: Will compare value 1 and Value 2 and will load the values that are equal or greater then the other.

Less Than: Will compare value 1 and Value 2 and will load the lesser of the two data values.

And: Both data sources will be added to the MDW data. The will be connected.

And	
Value 1	Result
Value 2	

Greater Than: Will compare value 1 and Value 2 and will load the greater of the two data values.

f_x
Logical

f_x
Not Equal To
Performs a logical NOT on a single value.

f_x
Equal To Or Less Than
Determines whether the first value is less than or equal to the second value.

f_x
Or
Performs a logical OR on two values.

f_x
Equal To
Determines whether two values are equal.

f_x
Not
Performs a logical NOT on a single value.

f_x
Equal To Or Greater Than
Determines whether the first value is greater than or equal to the second value.

f_x
Less Than
Determines whether the first value is less than the second value.

f_x
And
Performs a logical AND on two values.

f_x
Greater Than
Determines whether the first value is greater than the second value.

General Task Operations

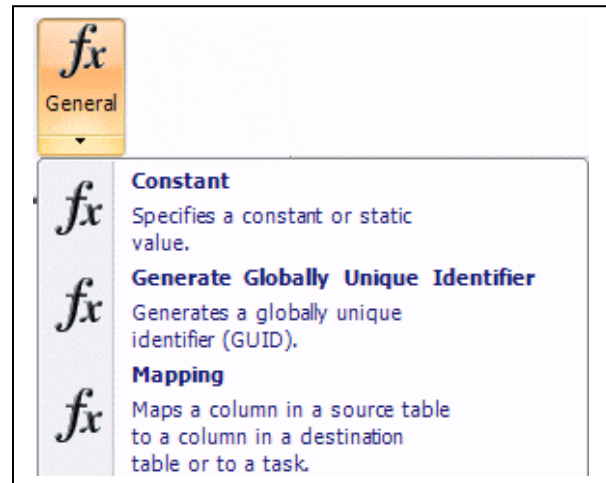
Constant: Provides the ability to insert the same value into a column in MDW.

eg: ACTV for Active Assets


Generate Globally Unique Identifier:


Every Asset requires a Unique Identifier, this will ensure information imported as a primary key. This will need to exist if the Data is mapped for these schemas in MDW “Road Names”, “Life Cycle Details”, “Geometry”, “Attribute”, “Asset”, “Surrounding”, “Life Cycle Event”, and “Block”

Mapping: Creates a one to one mapping task from the Data Provider to MDW. This can also be achieved by just clicking on the Data Provider and the Data Destination.



Things to Remember When Using DCT

- 
1. Connection to “**Web Services**” must be established
 2. Required Information:
 - a. Asset ID
 - b. Asset Description
 - c. Status of the Asset, to setup the asset as active “**ACTV**” should be entered as a **constant**
 3. When entering “Life Cycle Events” you will need to define the category of the Life Cycle Event
 - a. For Roads see [Appendix A - Road Life Cycle Events](#)
 - b. For Bridges see [Appendix B - Bridge Life Cycle Events](#)
 - c. For Remainder Asset Types see [Appendix C - Remainder Life Cycle Events](#)

4. All **Unique Identifier** will require a  task to be created for it.

Conversion to MDW (Municipal Data Works)

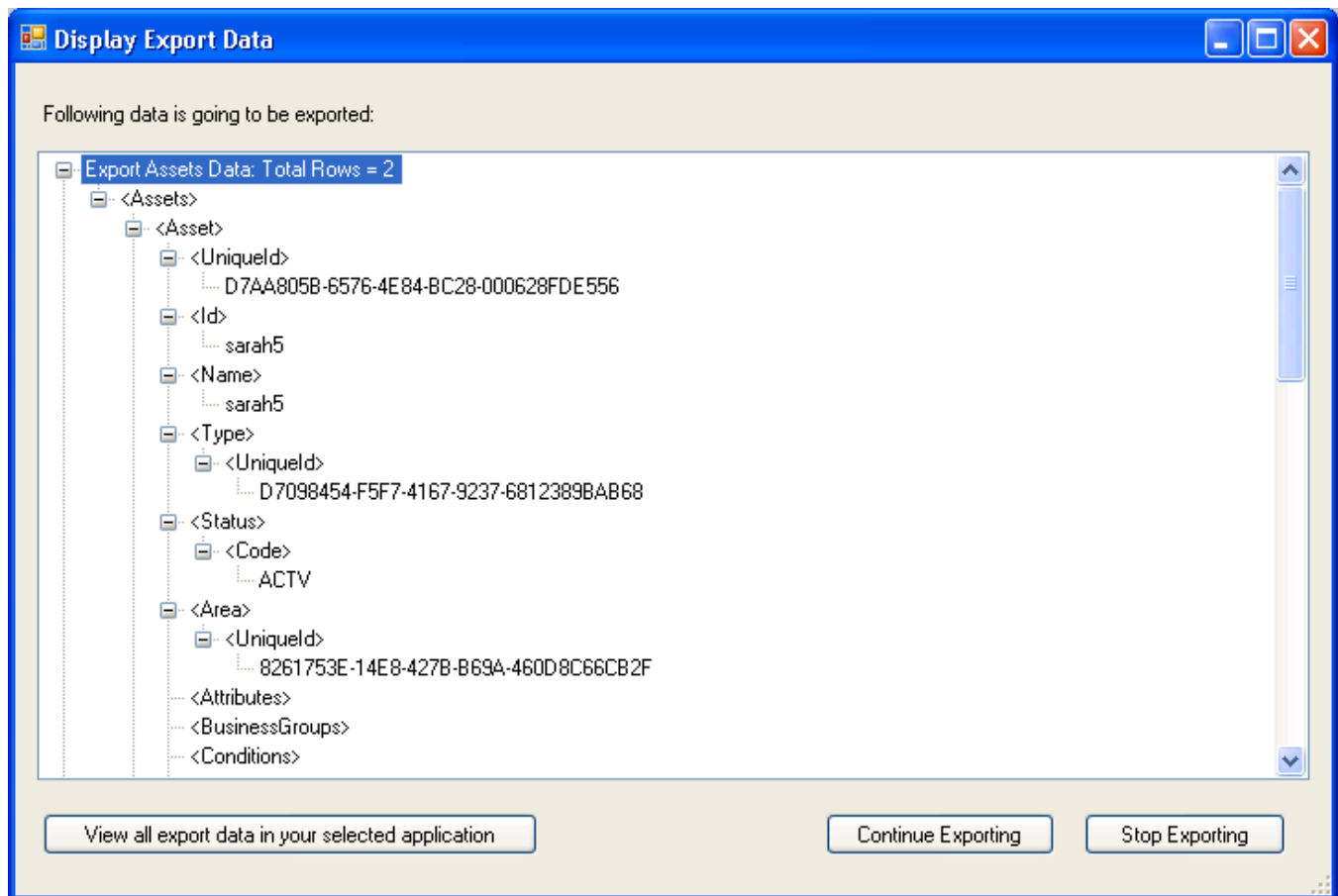
Once all mapping has been completed and you are ready to perform your Data Conversion.

Running the Conversion

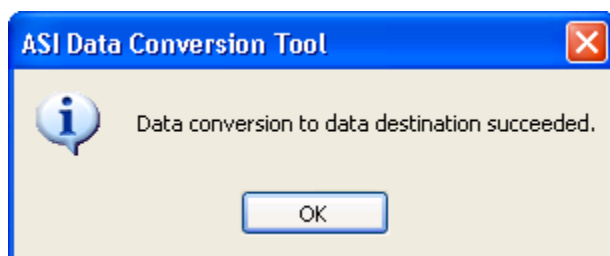


Go to the Conversion Tab and click **Run** to run the conversion.

A Data Export Table will appear. If you are satisfied with the summary in the table, select Continue. If you need to edit an item, select stop exporting.



If the conversion completes successfully you will see the following message:



To ensure the Data has been converted correctly you will now need to login to MDW, perform the search and verify the data is correct.

e.g.:

Search Display

Refine Search

Add Asset

Search Results

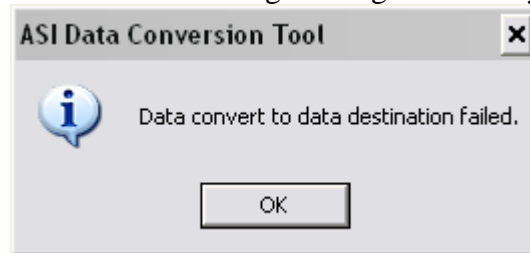
Your search for [Asset ID: 85,] returned the 2 records. Click "Refine Search" to change your search criteria.

Type	Asset Id	Asset Name	Status	Location
Railing System / Hand Railing	8563	Asset 63	Active	On 5 From 6 To 7
Barriers	8564	Asset 64	Active	

Error Reports



Clicking the **Run** icon and you receive the following Message Box that your Data Conversion has failed.



Once you click OK, you will see an error report located at the bottom of Mapping Work Space.

Validation			
		Error Message	
!	1	Asset ID is duplicated within the specified Asset Type.	

You will now need to fix the error, the error message will explain the problem with the data to help resolve.

Double Click the error to locate the error in the data. You will now need to resolve the before completing the Conversion.

DCT Tutorial

To help in your data load, here is a tutorial that will provide step by step instruction on performing a Data Conversion to MDW, with an Excel Data Source.

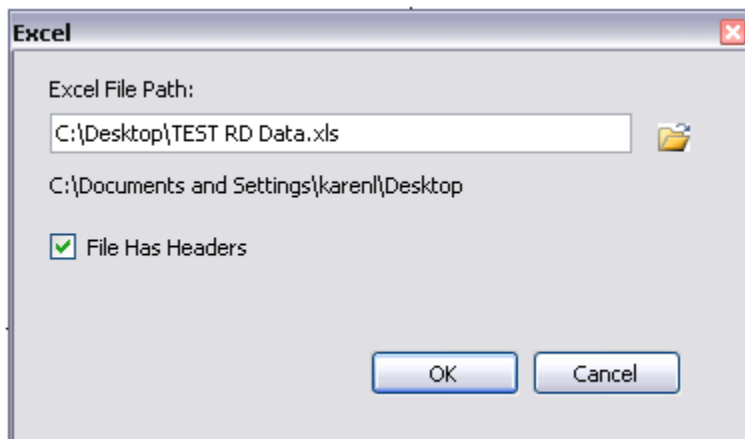
Step 1 Double Click the **DCT Icon**  to launch the Data Conversion Tool.

Step 2 On the **File Tab** → Click  to create your new project.

Step 3 On the **Data Tab** → Click  to open the connection information.

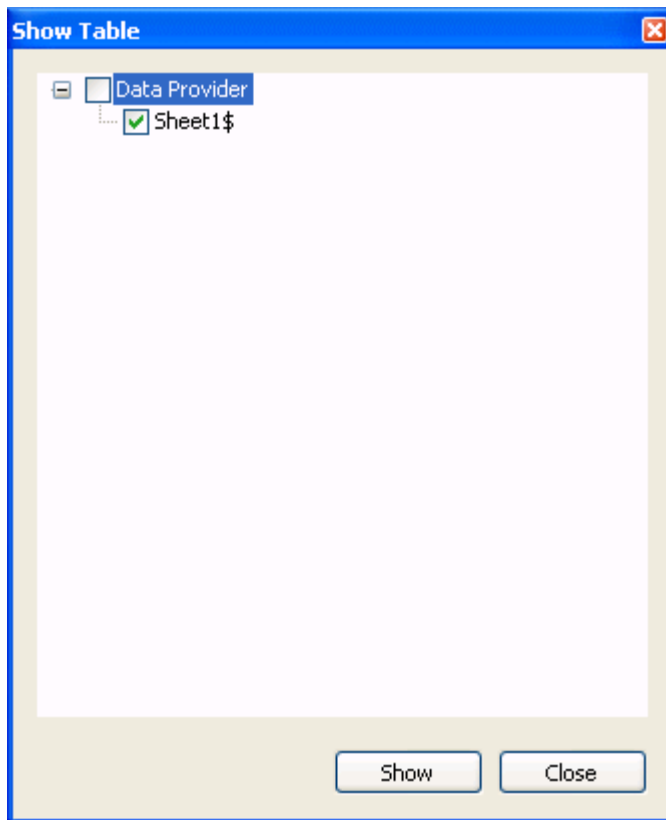
Step 4 Locate the Data Provider File.


Step 5 Select “File has Headers” if required.



Step 6 Click OK

Step 7 Select the Data Provider worksheet the information is found in.



Step 8 Click on  to make your connection to MDW.

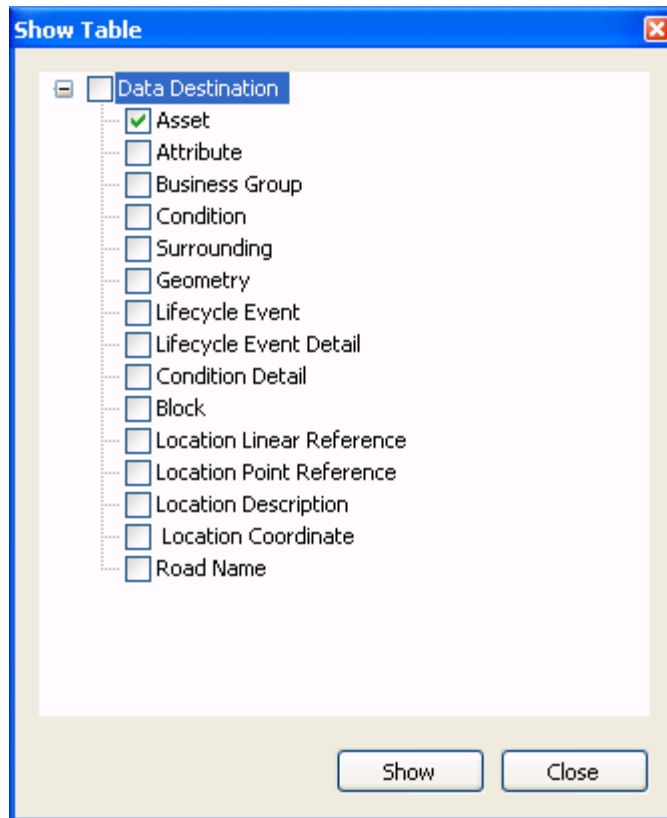
Step 9 Enter the information; all fields are required.

- **Web Services URL:** Please enter the path to your MDW Web Service.
- **User Name:** Will be your email address and it would be the same as the one you use to access MDW.
- **Password:** Will be the same as your MDW password

- **Area:** Will be the same as MDW. When you click the drop down it will display the list of “areas” you have access too.
- **Asset Type:** Each Asset Type will need to have a separate data upload and project created. Select from the drop down list the Asset Type you will be uploading.

Step 10 Click OK

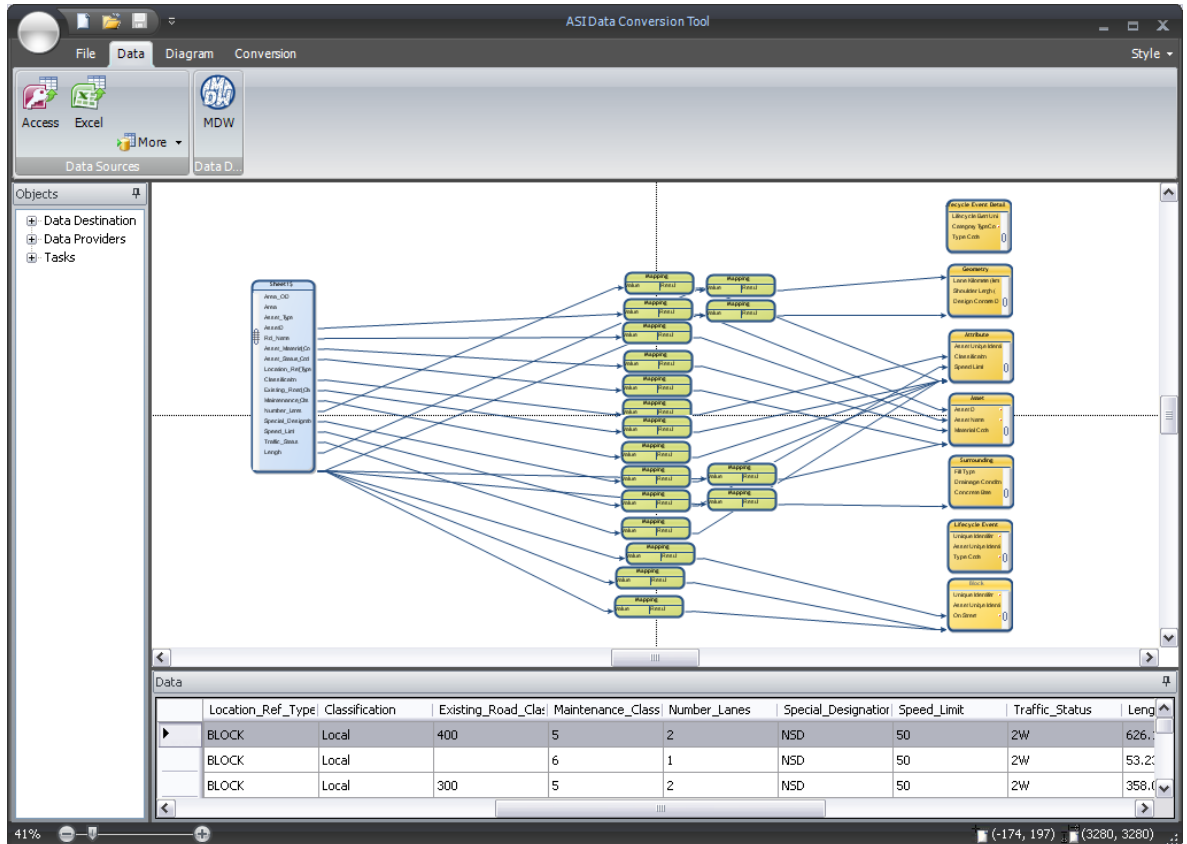
Step 11 Select the Data Destination Tables you want to appear on the Mapping Area and click Show.



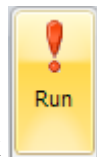
Step 12 Click on “Asset Id” on the Data Provider table → Draw a line directly to Asset ID on the Data Destination table to automatically create the mapping.

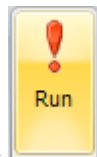
i To remove a mapping – right click on the mapping and select remove. Continue this until all Data has been mapped to the MDW Tables.

DiagramExample:

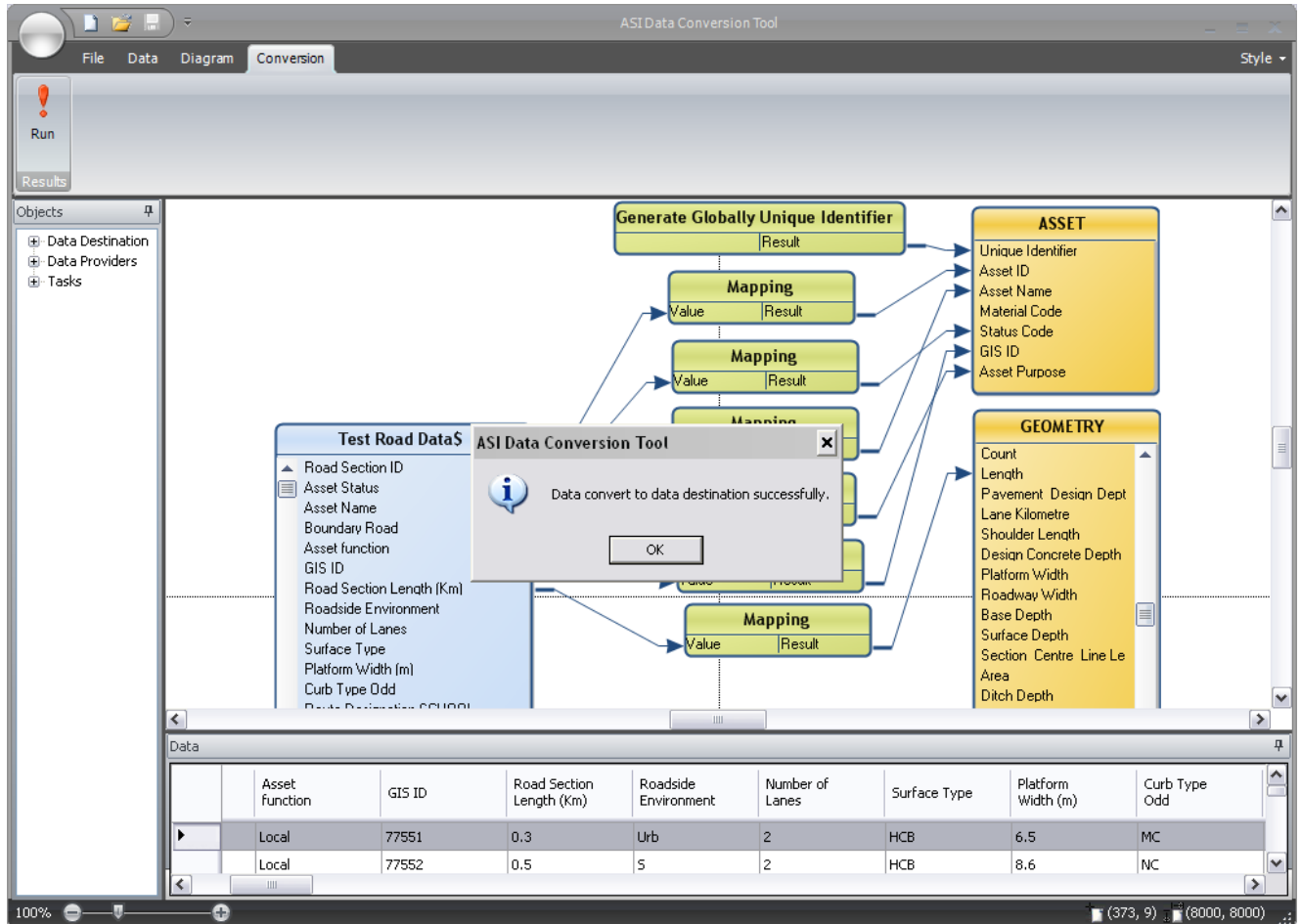


Step 13 Right click on the Blue – Data Provider Box and Select Show Data. Your Data will be displayed



Step 14 On the **Conversion Tab** → Click  to run the conversion.

Step 15 Select “Continue Exporting” on the Display Export Data text box if data is correct.



Step 16 Click OK if your conversion has successfully processed. If it has failed, see the [“Error Report”](#) and walk through resolving error.

Step 17 Login to MDW and view Data to ensure conversion was successfully processed.

Search Display Refine Search Add Asset

Search Results				
Your search for [Asset ID: 85,] returned the 2 records. Click "Refine Search" to change your search criteria.				
Type	Asset Id	Asset Name	Status	Location
Railing System / Hand Railing	8563	Asset 63	Active	On 5 From 6 To 7
Barriers	8564	Asset 64	Active	

Installing & Uninstalling DCT

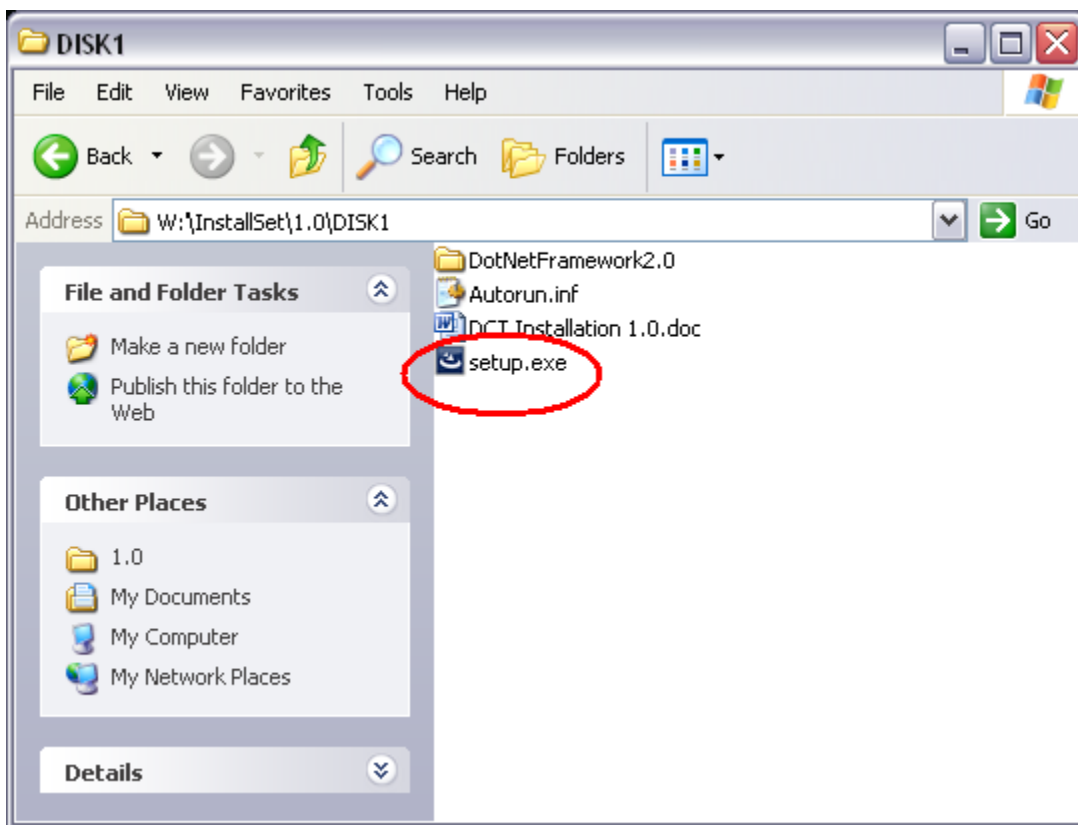
System Requirements

1. Windows 2000 Server, Windows XP or Windows Server 2003.
2. .Net Framework version 2.0 installed.
3. WSE 2.0 sp2
4. Connection to the Internet

Installing DCT

Before installing DCT, please ensure all work is saved and close any open programs. A computer restart may be required.

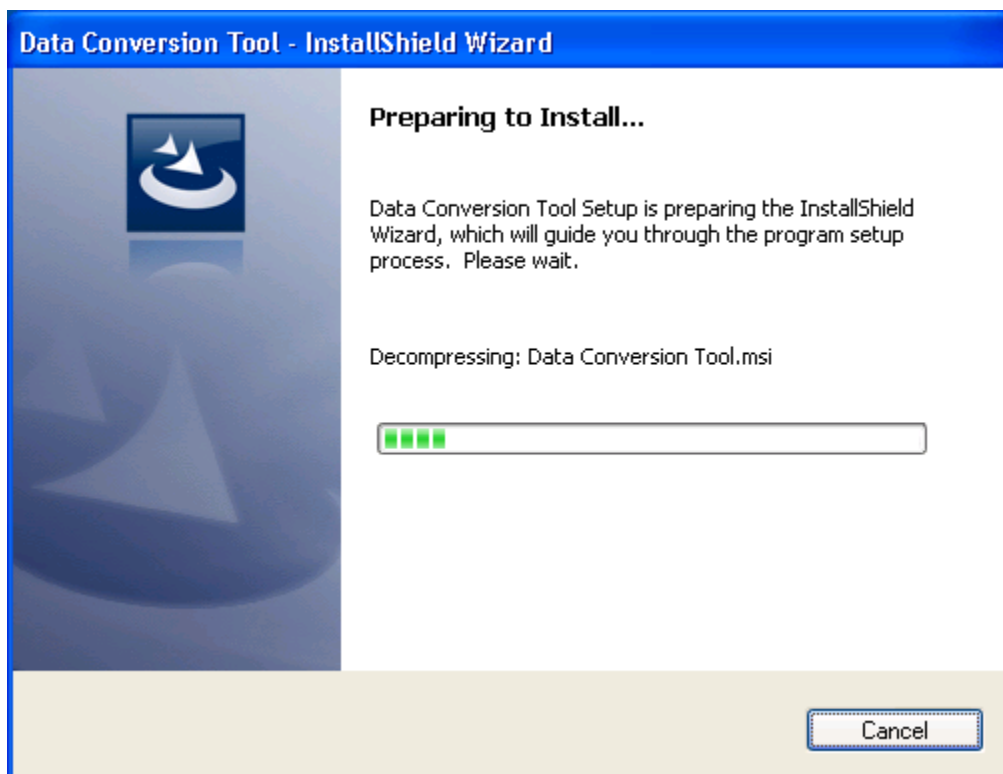
Navigate and Run setup.exe from either the provided CD/DVD or URL



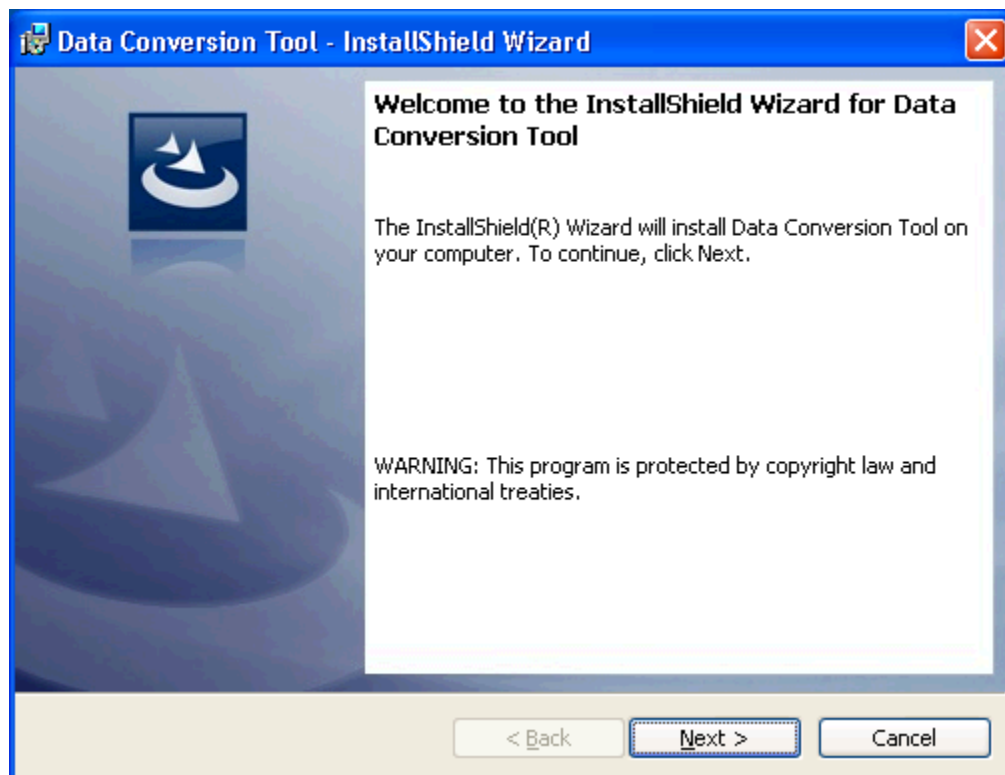
1. If the .Net Framework 2.0 is not installed on the computer you will be prompted to install it at this point. Please follow the on screen instructions to install .Net Framework 2.0. When prompted, select "Run" the software dotnetfx.exe.



2. If required, reboot your computer. The InstallShield Wizard will continue the install upon restart.



3. Click **NEXT** on the "Welcome to InstallShield Wizard for Data Conversion Tool"

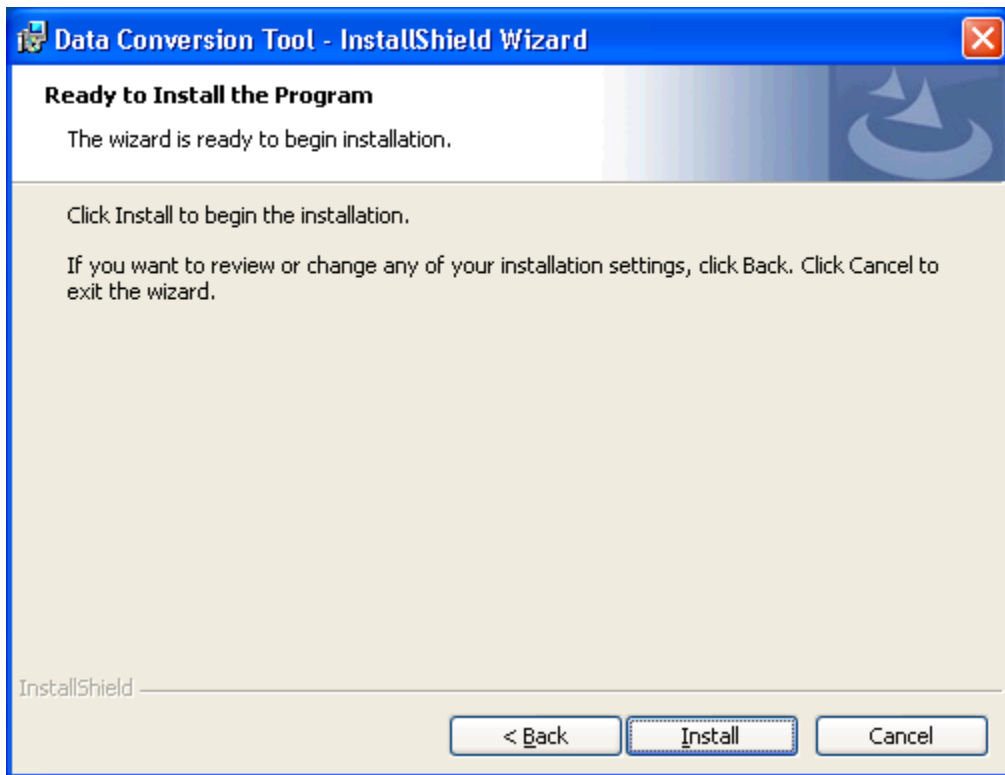


4. Enter the **Users Name** and **Organization**

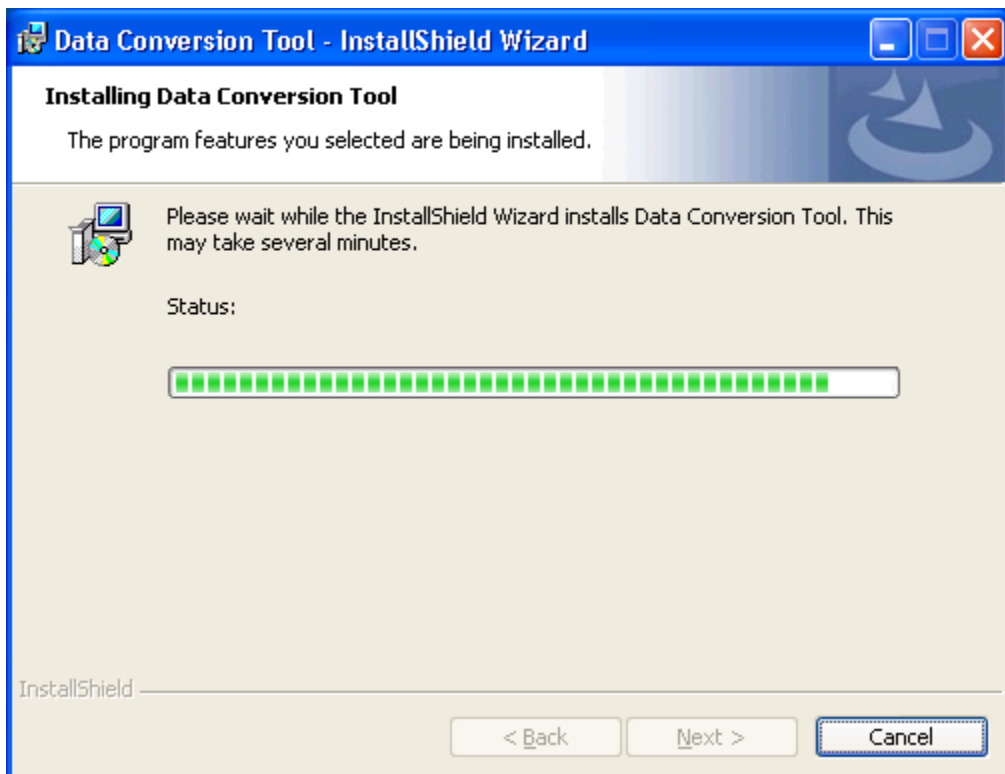
Click **NEXT**

This is a screenshot of the 'Data Conversion Tool - InstallShield Wizard' window at the 'Customer Information' step. The window has a blue title bar with the text 'Data Conversion Tool - InstallShield Wizard' and a close button. The main area is white and contains the following text: 'Customer Information', 'Please enter your information.', 'User Name:', 'tester', 'Organization:', and an empty text box. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. The 'Next >' button is highlighted.

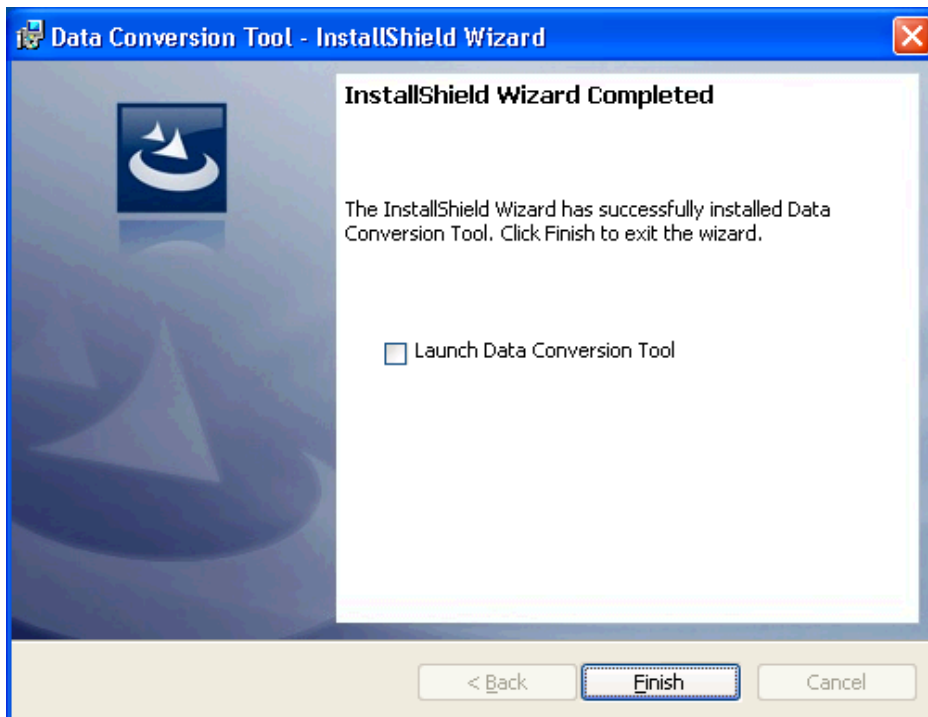
5. Click **Install** to start the Data Conversion Tool Installation



The Status of the Installation



6. Click **Finish** to complete installation.



7. Enter the License Key information to activate the Data Conversion Tool. If a serial key was not provided or was lost, please contact ASI for a new key.

The screenshot shows a window titled "Data Conversion Tool - License". The window has a blue header bar with the title and standard window controls. The main area is white with a blue sidebar on the left. The text in the main area reads: "Please enter following information to activate the product". Below this, there are five input fields: "License Key" (a multi-part field with six boxes), "Name", "Organization", "Phone", and "Email". Each field has a small star icon to its right, indicating it is a required field. At the bottom left, there is a legend: "★ Required field". At the bottom right, there is an "Activate" button.

A Data Conversion Tool icon will be added to the desk top for future use. Double Click the icon to open the DCT.



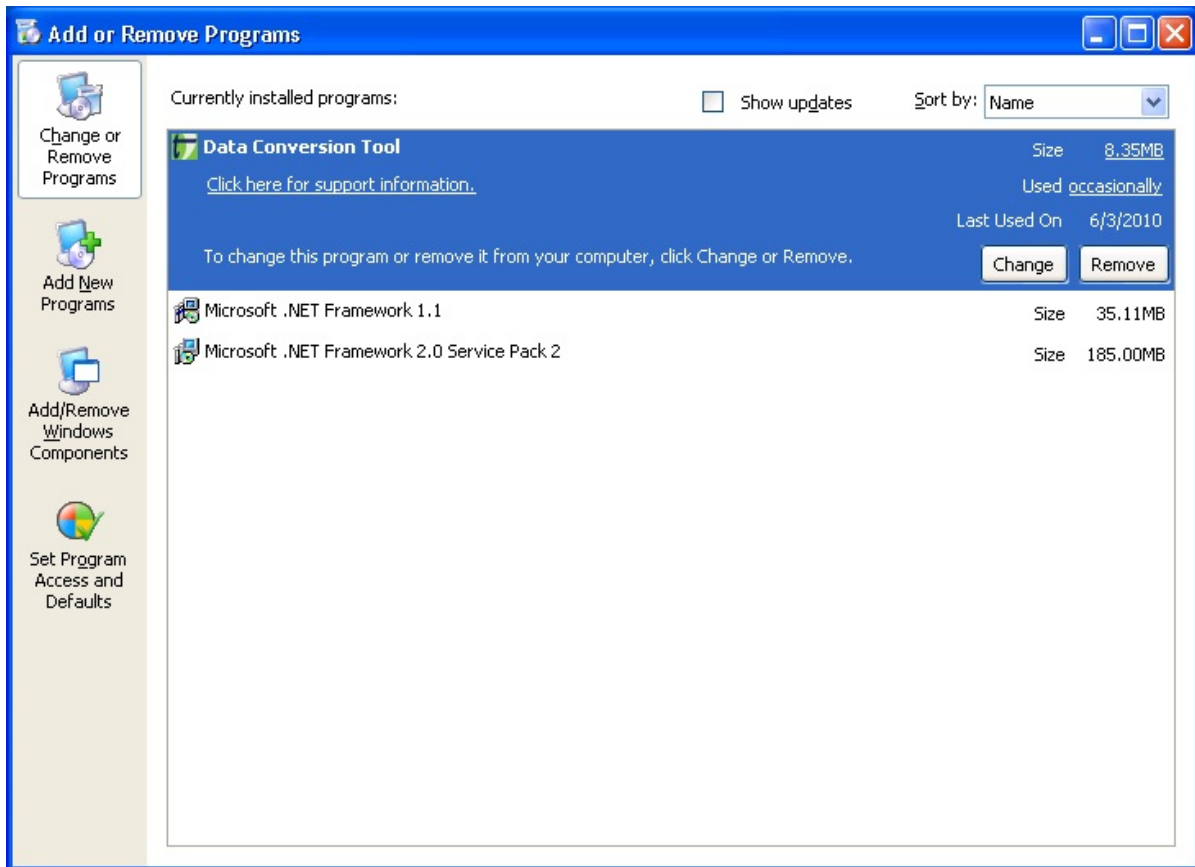
Uninstalling DCT

There are two ways to remove the Data Conversion Tool Application. Please ensure the Data Conversion Tool program is closed prior to beginning the uninstall process.

1. Remove the Data Conversion Tool Application from the Windows's Control Panel

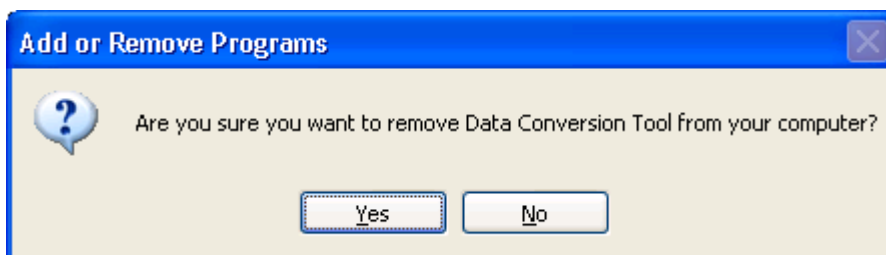
Step 1 Click Start \Rightarrow Control Panel \Rightarrow Add or Remove Programs

Step 2 Select Data Conversion Tool from the installed program list

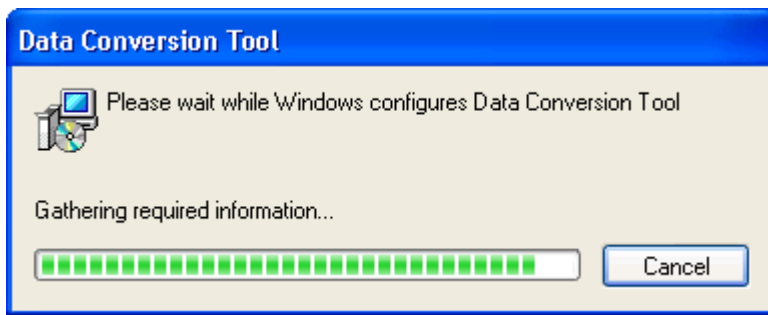


Step 3 Click the Remove button

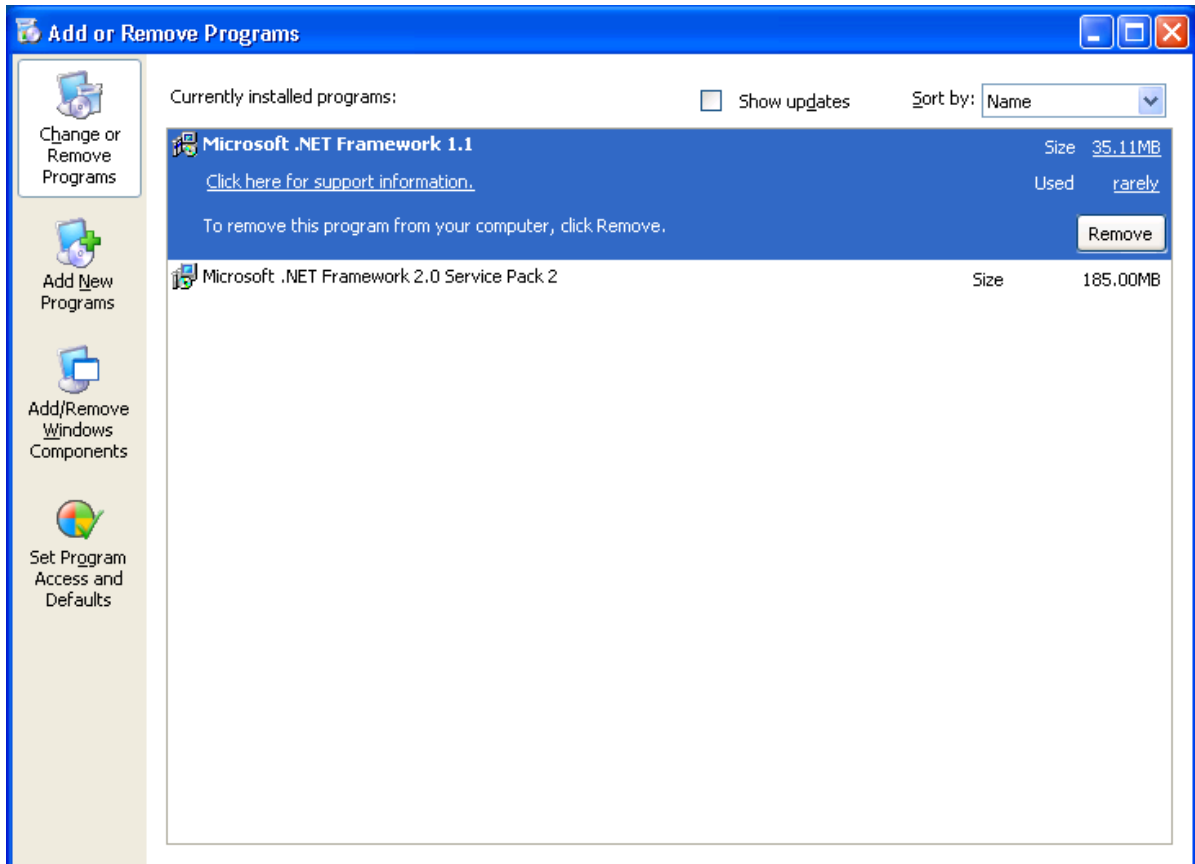
Step 4 Select Yes to begin uninstalling.



Step 5 The Data Conversion Tool will be removed.



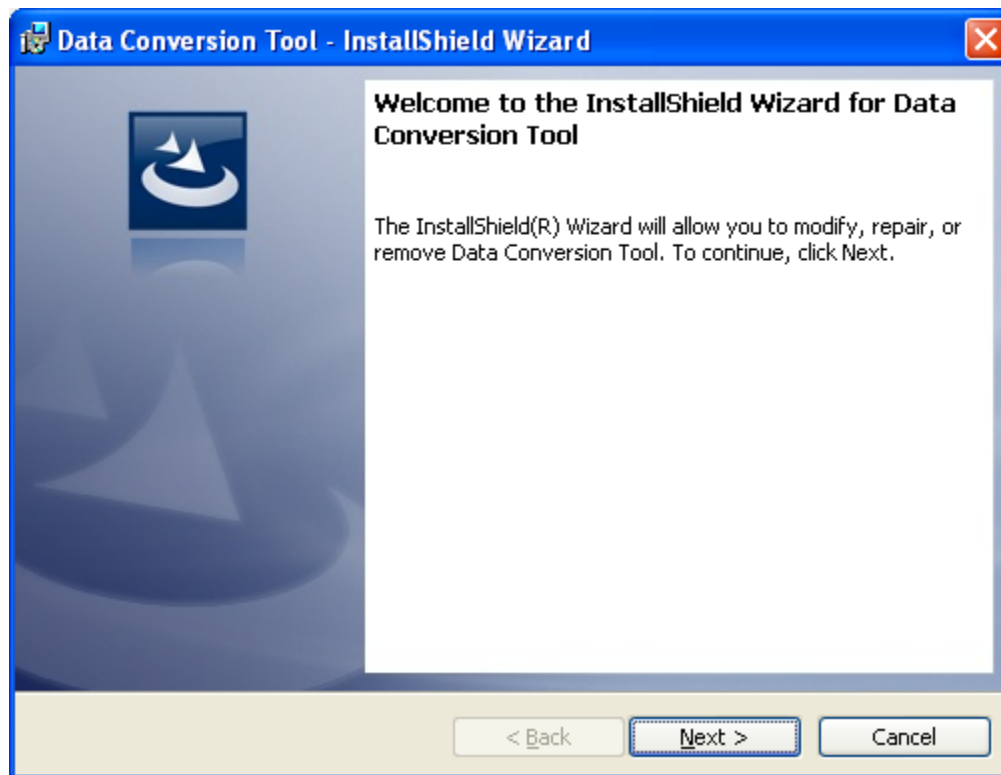
Step 6 The Data Conversion Tool is removed and no longer appears in the Add or Remove Programs Dialogue box.



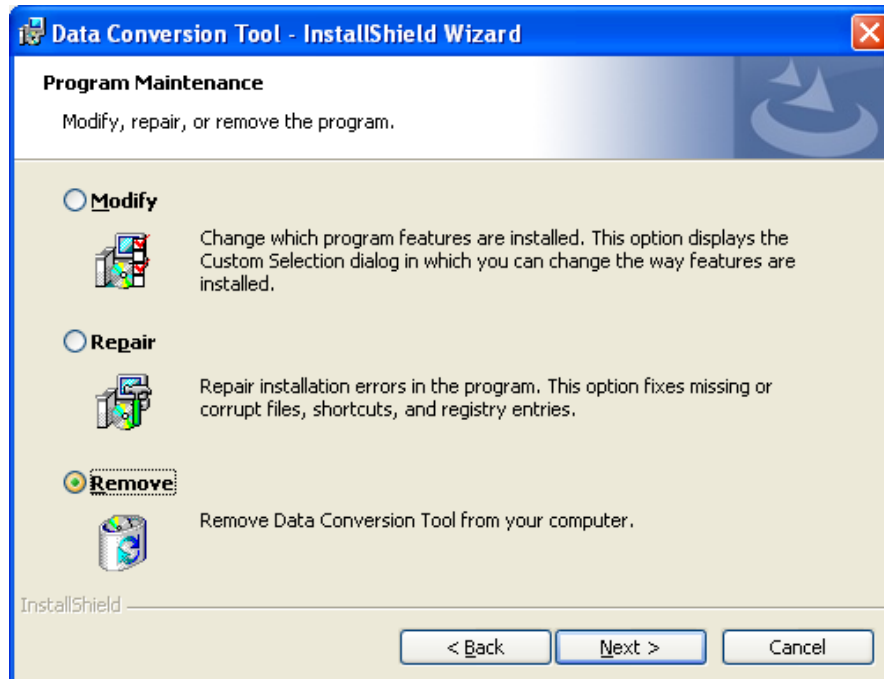
2. Remove the Data Conversion Tool Application from Data Conversion Tool CD

Step 1 Run setup.exe

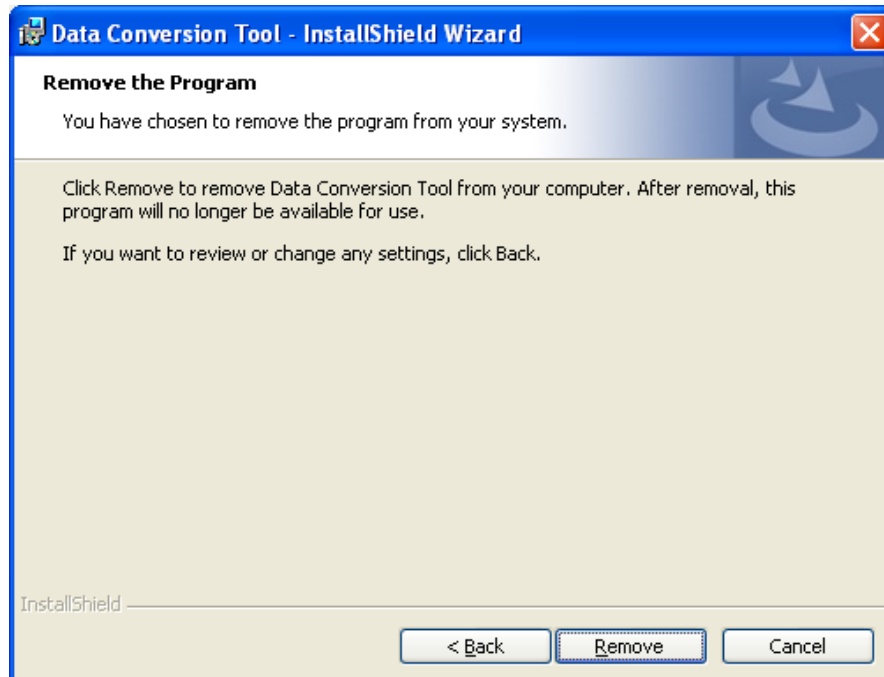
Step 2 Click **Next** on Welcome screen.



Step 3 Select **Remove** option and click **Next**.



Step 4 Click **Remove**. The Data Conversion Tool will be removed.

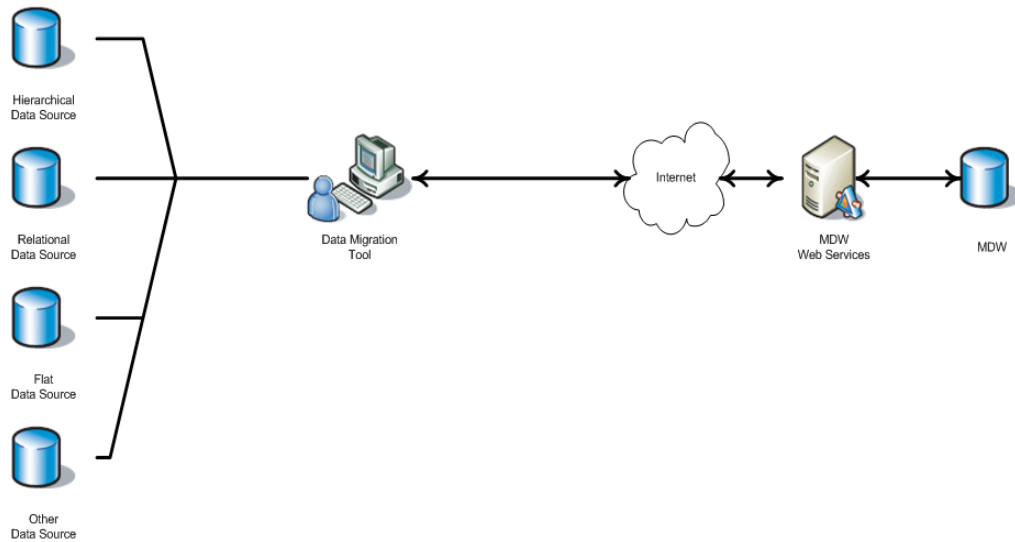


Step 5 Click **Finish**.

DCT Workflow

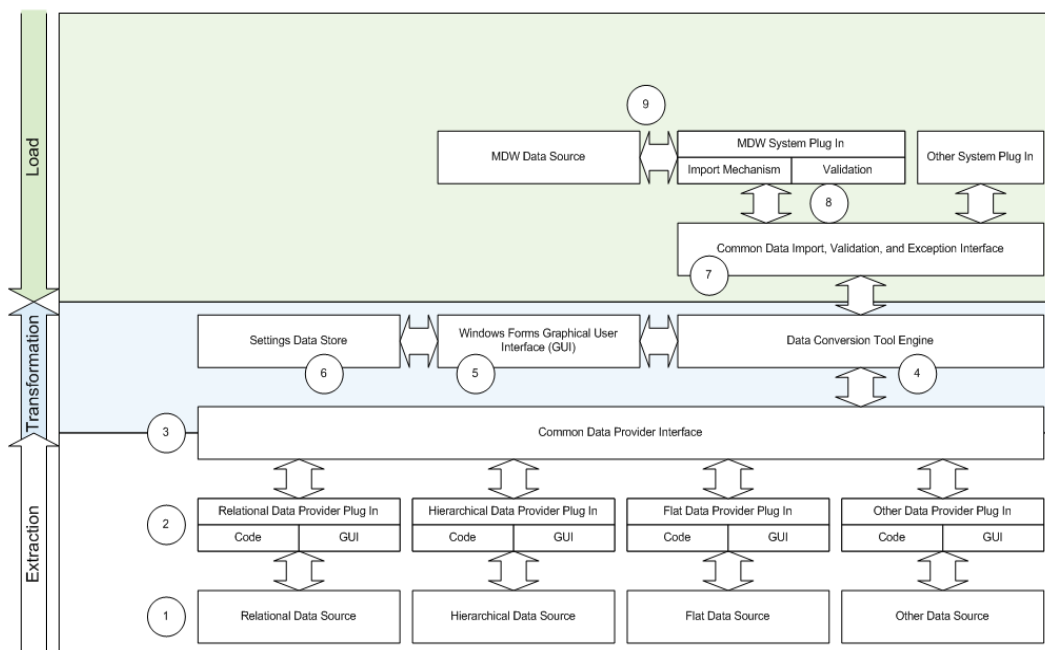
The DCT process for data transfer is to connect the DCT to an input plug-in which can be in Text, Excel, Relational, etc. and then the data structure will be displayed to the user. Here the user will be able to create mapping, tasks, and then load the data in MDW using the MDW Web Services plug-in.

DCT Process Diagram 1



Data Conversion Tool Internal Architecture

The migration process may be saved and will be repeatable to provide a means for future asset updates.



1. Data will be imported from a variety of Data Sources. These will include:
 - a. SQL Server

- b. Oracle
 - c. Excel
 - d. Text
 - e. XML
 - f. Top Speed
 - g. Access
2. Plug-ins will be created for each type of Data Source we will be pulling data from. A user interface will be created for each type which will allow the user to locate the type of plug-in, where the data is located, and which tables or columns will be used.
 3. The Data format will be changed in XML . As the data needs to be changed over, it will perform this change in this step before the user will start working with it within the DCT.
 4. The User interface will give the user the ability to map the data to where they want it in MDW. Templates will be created for mappings which could be used on an ongoing basis for any other database structure.
 5. Once the user has made their mapping selection, they will move data into MDW using Web Services.
 6. Validation of the data moved, and error messages will be returned to the user, via the User Interface.

Appendix A - Road Life Cycle Events

ATT	DESCR	Category	LCECatDesc	LCETypeCode	LCEDesc
RD	Road Section	CONS	Construction	ASSM	Year Assumption
RD	Road Section	CONS	Construction	BS	Base and Surface
RD	Road Section	CONS	Construction	CONS	Installation
RD	Road Section	CONS	Construction	DHF	Double High Float
RD	Road Section	CONS	Construction	DHF/SS	Double High Float/Slurry Seal
RD	Road Section	CONS	Construction	DHF/SST	Double High Float/Single Surface Treatment
RD	Road Section	CONS	Construction	DST	Double Surface Treatment
RD	Road Section	CONS	Construction	ESTM-REP	Estimated Replacement
RD	Road Section	CONS	Construction	MAINT	Maintenance Year
RD	Road Section	CONS	Construction	REC	Reconstruction Nominal Storm Sewers (Rural)
RD	Road Section	CONS	Construction	REPLACE	Replace
RD	Road Section	CONS	Construction	RNS	Reconstruction Nominal Storm Sewers (Urban)
RD	Road Section	CONS	Construction	ROREC	Reconstruct
RD	Road Section	CONS	Construction	RREC	Rural Reconstruction
RD	Road Section	CONS	Construction	RSS	Reconstruction including installation of Storm Sewers
RD	Road Section	CONS	Construction	SRR	Storm Sewer Installation and Road Reinstatement
RD	Road Section	CONS	Construction	SS	Slurry Seal
RD	Road Section	CONS	Construction	SST	Single Surface Treatment
RD	Road Section	CONS	Construction	STUP	Surface Treatment - on unpaved surfaces
RD	Road Section	CONS	Construction	UMU	Urban Major Upgrade
RD	Road Section	CONS	Construction	UREC	Urban Reconstruction
RD	Road Section	CONS	Construction	WRRB	Widening Rural Rehab Base
RD	Road Section	CONS	Construction	WRRC	Widening Rural Reconstruction
RD	Road Section	CONS	Construction	WURC	Widening Urban Reconstruction
RD	Road Section	IMPROVE	Improvement	RCN_CMITED	Reconstruction Committed
RD	Road Section	IMPROVE	Improvement	RCN_CMPED	Reconstruction Completed
RD	Road Section	IMPROVE	Improvement	RH_CMITED	Rehabilitation Committed
RD	Road Section	IMPROVE	Improvement	RH_CMPED	Rehabilitation Completed
RD	Road Section	INSP	Inspection	RD-INSP	Road Inspection
RD	Road Section	INSP	Inspection	TRAFcnt	Traffic Count
RD	Road Section	INSP	Inspection	TRAFcntAC	Actual Traffic Count
RD	Road Section	INSP	Inspection	TRAFcntES	Estimated Traffic Count
RD	Road Section	REHAB	Rehabilitation	CO	Carry Over
RD	Road Section	REHAB	Rehabilitation	CRRO	Cold-in-place recycling/rural overlay
RD	Road Section	REHAB	Rehabilitation	GRUO	Grind and Overlay
RD	Road Section	REHAB	Rehabilitation	MURH	Major Urban Rehab (90mm HCB+5-20% spot)
RD	Road Section	REHAB	Rehabilitation	NC	Proposed Road Construction
RD	Road Section	REHAB	Rehabilitation	PR1	Pulverizing and Resurfacing - single lift
RD	Road Section	REHAB	Rehabilitation	PR2	Pulverizing and Resurfacing - double lift
RD	Road Section	REHAB	Rehabilitation	R1	Resurfacing - single lift
RD	Road Section	REHAB	Rehabilitation	R2	Resurfacing - double lift
ATT	DESCR	Category	LCECatDesc	LCETypeCode	LCEDesc
RD	Road Section	REHAB	Rehabilitation	RCONS	Reconstruction

RD	Road Section	REHAB	Rehabilitation	RECIMPR	Recommended Improvement
RD	Road Section	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction performed
RD	Road Section	REHAB	Rehabilitation	RM	Major Resurfacing
RD	Road Section	REHAB	Rehabilitation	RMU	Rural Major Upgrade
RD	Road Section	REHAB	Rehabilitation	ROLV	Rural Overlay/Leveling Course
RD	Road Section	REHAB	Rehabilitation	RUPG	Rural Upgrade
RD	Road Section	REHAB	Rehabilitation	RW	Resurface and Widen
RD	Road Section	REHAB	Rehabilitation	SD	Spot Drainage
RD	Road Section	REHAB	Rehabilitation	SI	Spot Road Intersection
RD	Road Section	REHAB	Rehabilitation	SR	Spot Road
RD	Road Section	REHAB	Rehabilitation	UGO	Urban Grind Overlay
RD	Road Section	REHAB	Rehabilitation	UOL	Urban Overlay (incl mill along curb)
RD	Road Section	REHAB	Rehabilitation	WRSC	Widening Rural Salvage Base
RD	Road Section	REHAB	Rehabilitation	WURB	Widening Urban Rehab Base
RD	Road Section	REHAB	Rehabilitation	WUSC	Widening Urban Salvage Base

Appendix B - Bridge Life Cycle Events

ATC	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
BR	Bridge	CONS	Construction	ASSM	Year Assumption
BR	Bridge	CONS	Construction	CONS	Installation
BR	Bridge	CONS	Construction	ESTM-REP	Estimated Replacement
BR	Bridge	CONS	Construction	MAINT	Maintenance Year
BR	Bridge	CONS	Construction	REPLACE	Replace
BR	Bridge	CONS	Construction	SUBCONS	Substructure Construction
BR	Bridge	CONS	Construction	SUPRCONS	Superstructure (Re)Construction
BR	Bridge	IMPROVE	Improvement	CDR	Complete Deck Replacement
BR	Bridge	IMPROVE	Improvement	CDS	CDS
BR	Bridge	IMPROVE	Improvement	CSS	Coating Structural Steel
BR	Bridge	IMPROVE	Improvement	IAG	Install Approach Guiderail
BR	Bridge	IMPROVE	Improvement	LMC	Latex Modified Concrete Overlay
BR	Bridge	IMPROVE	Improvement	OTH	Other
BR	Bridge	IMPROVE	Improvement	OWP	Overlay, waterproof, Pav
BR	Bridge	IMPROVE	Improvement	PWP	Patch, Waterproof, Pave
BR	Bridge	IMPROVE	Improvement	RCN_CMITED	Reconstruction Committed
BR	Bridge	IMPROVE	Improvement	RCN_CMPED	Reconstruction Completed
BR	Bridge	IMPROVE	Improvement	RCS	Rehabilitation/Replacement
BR	Bridge	IMPROVE	Improvement	RH_CMITED	Rehabilitation Committed
BR	Bridge	IMPROVE	Improvement	RH_CMPED	Rehabilitation Completed
BR	Bridge	IMPROVE	Improvement	RIR	Railing Improvement/Replacement
BR	Bridge	IMPROVE	Improvement	RSB	Rehabilitate Substructure
BR	Bridge	IMPROVE	Improvement	RSP	Rehabilitate Superstructure
BR	Bridge	IMPROVE	Improvement	SPI	SPI
BR	Bridge	IMPROVE	Improvement	TJR	Transverse Exp Joint Seal Replacement
BR	Bridge	IMPROVE	Improvement	TJS	Transverse Exp Joint Seal Replacement
BR	Bridge	IMPROVE	Improvement	VCI	VCI
BR	Bridge	IMPROVE	Improvement	WAP	Waterproof and Pave
BR	Bridge	IMPROVE	Improvement	WSO	Widen Superstructure Only
BR	Bridge	IMPROVE	Improvement	WSR	Wearing Surface Rehabilitation
BR	Bridge	IMPROVE	Improvement	WSS	Widen Superstructure and Substructure
BR	Bridge	INSP	Inspection	APPRV	Approvals
BR	Bridge	INSP	Inspection	BNNLINSP	Biennial Inspection
BR	Bridge	INSP	Inspection	BR-INSP	Bridge Inspection
BR	Bridge	INSP	Inspection	BRDGMSTR	Bridge Master Inspection
BR	Bridge	INSP	Inspection	CNDSRVY	Condition Survey
BR	Bridge	INSP	Inspection	EVL	Evaluation
BR	Bridge	INSP	Inspection	TRAFcnt	Traffic Count
BR	Bridge	INSP	Inspection	TRAFcntAC	Actual Traffic Count
BR	Bridge	INSP	Inspection	TRAFcntES	Estimated Traffic Count
ATC	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
BR	Bridge	INSP	Inspection	UNDWTR	Underwater Inspection

BR	Bridge	INVEST	Investigation	CI	Condition Inspection
BR	Bridge	INVEST	Investigation	DCS	Deck Condition Survey
BR	Bridge	INVEST	Investigation	LCE	Load capacity evaluation
BR	Bridge	INVEST	Investigation	RDI	Routine Detailed Inspection
BR	Bridge	INVEST	Investigation	RRA	Rehabilitation / Replacement Analysis
BR	Bridge	REHAB	Rehabilitation	RCONS	Reconstruction
BR	Bridge	REHAB	Rehabilitation	RECIMPR	Recommended Improvement
BR	Bridge	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction performed
BR-CUL	Culvert	CONS	Construction	ASSM	Year Assumption
BR-CUL	Culvert	CONS	Construction	CONS	Installation
BR-CUL	Culvert	CONS	Construction	ESTM-REP	Estimated Replacement
BR-CUL	Culvert	CONS	Construction	MAINT	Maintenance Year
BR-CUL	Culvert	CONS	Construction	REPLACE	Replace
BR-CUL	Culvert	CONS	Construction	SUBCONS	Substructure Construction
BR-CUL	Culvert	CONS	Construction	SUPRCONS	Superstructure (Re)Construction
BR-CUL	Culvert	IMPROVE	Improvement	RCN_CMITED	Reconstruction Committed
BR-CUL	Culvert	IMPROVE	Improvement	RCN_CMPED	Reconstruction Completed
BR-CUL	Culvert	IMPROVE	Improvement	RH_CMITED	Rehabilitation Committed
BR-CUL	Culvert	IMPROVE	Improvement	RH_CMPED	Rehabilitation Completed
BR-CUL	Culvert	INSP	Inspection	APPRV	Approvals
BR-CUL	Culvert	INSP	Inspection	BNNLINSP	Biennial Inspection
BR-CUL	Culvert	INSP	Inspection	BRDGMSTR	Bridge Master Inspection
BR-CUL	Culvert	INSP	Inspection	CNDSRVY	Condition Survey
BR-CUL	Culvert	INSP	Inspection	CULV-INSP	Culvert Inspection
BR-CUL	Culvert	INSP	Inspection	EVL	Evaluation
BR-CUL	Culvert	INSP	Inspection	TRAFcnt	Traffic Count
BR-CUL	Culvert	INSP	Inspection	TRAFcntAC	Actual Traffic Count
BR-CUL	Culvert	INSP	Inspection	TRAFcntES	Estimated Traffic Count
BR-CUL	Culvert	INSP	Inspection	UNDWTR	Underwater Inspection
BR-CUL	Culvert	REHAB	Rehabilitation	RCONS	Reconstruction
BR-CUL	Culvert	REHAB	Rehabilitation	RECIMPR	Recommended Improvement
BR-CUL	Culvert	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction performed
BR-RET-WLL	Retaining Wall	CONS	Construction	CONS	Installation
BR-RET-WLL	Retaining Wall	CONS	Construction	ESTM-REP	Estimated Replacement
BR-RET-WLL	Retaining Wall	CONS	Construction	REPLACE	Replace
BR-RET-WLL	Retaining Wall	REHAB	Rehabilitation	RCONS	Reconstruction
BR-TUN	Tunnel	CONS	Construction	ASSM	Year Assumption
BR-TUN	Tunnel	CONS	Construction	CONS	Installation
BR-TUN	Tunnel	CONS	Construction	ESTM-REP	Estimated Replacement
BR-TUN	Tunnel	CONS	Construction	MAINT	Maintenance Year
BR-TUN	Tunnel	CONS	Construction	REPLACE	Replace
BR-TUN	Tunnel	CONS	Construction	SUBCONS	Substructure Construction
ATC	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
BR-TUN	Tunnel	CONS	Construction	SUPRCONS	Superstructure (Re)Construction
BR-TUN	Tunnel	IMPROVE	Improvement	CDR	Complete Deck Replacement

BR-TUN	Tunnel	IMPROVE	Improvement	CDS	CDS
BR-TUN	Tunnel	IMPROVE	Improvement	CSS	Coating Structural Steel
BR-TUN	Tunnel	IMPROVE	Improvement	IAG	Install Approach Guiderail
BR-TUN	Tunnel	IMPROVE	Improvement	LMC	Latex Modified Concrete Overlay
BR-TUN	Tunnel	IMPROVE	Improvement	OTH	Other
BR-TUN	Tunnel	IMPROVE	Improvement	OWP	Overlay, waterproof, Pav
BR-TUN	Tunnel	IMPROVE	Improvement	PWP	Patch, Waterproof, Pave
BR-TUN	Tunnel	IMPROVE	Improvement	RCS	Rehabilitation/Replacement
BR-TUN	Tunnel	IMPROVE	Improvement	RIR	Railing Improvement/Replacement
BR-TUN	Tunnel	IMPROVE	Improvement	RSB	Rehabilitate Substructure
BR-TUN	Tunnel	IMPROVE	Improvement	RSP	Rehabilitate Superstructure
BR-TUN	Tunnel	IMPROVE	Improvement	SPI	SPI
BR-TUN	Tunnel	IMPROVE	Improvement	TJR	Transverse Exp Joint Seal Replacement
BR-TUN	Tunnel	IMPROVE	Improvement	TJS	Transverse Exp Joint Seal Replacement
BR-TUN	Tunnel	IMPROVE	Improvement	VCI	VCI
BR-TUN	Tunnel	IMPROVE	Improvement	WAP	Waterproof and Pave
BR-TUN	Tunnel	IMPROVE	Improvement	WSO	Widen Superstructure Only
BR-TUN	Tunnel	IMPROVE	Improvement	WSR	Wearing Surface Rehabilitation
BR-TUN	Tunnel	IMPROVE	Improvement	WSS	Widen Superstruture and Substructure
BR-TUN	Tunnel	INSP	Inspection	APPRV	Approvals
BR-TUN	Tunnel	INSP	Inspection	BNNLINSP	Biennial Inspection
BR-TUN	Tunnel	INSP	Inspection	BR-INSP	Bridge Inspection
BR-TUN	Tunnel	INSP	Inspection	BRDGMSTR	Bridge Master Inspection
BR-TUN	Tunnel	INSP	Inspection	CNDSRVY	Condition Survey
BR-TUN	Tunnel	INSP	Inspection	EVL	Evaluation
BR-TUN	Tunnel	INSP	Inspection	UNDWTR	Underwater Inspection
BR-TUN	Tunnel	INVEST	Investigation	CI	Condition Inspection
BR-TUN	Tunnel	INVEST	Investigation	DCS	Deck Condition Survey
BR-TUN	Tunnel	INVEST	Investigation	LCE	Load capacity evaluation
BR-TUN	Tunnel	INVEST	Investigation	RDI	Routine Detailed Inspection
BR-TUN	Tunnel	INVEST	Investigation	RRA	Rehabilitation / Replacement Analysis
BR-TUN	Tunnel	REHAB	Rehabilitation	RCONS	Reconstruction
BR-TUN	Tunnel	REHAB	Rehabilitation	RECIMPR	Recommended Improvement
BR-TUN	Tunnel	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction performed

Appendix C - Remainder Life Cycle Events

AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
BcyclStnd	Bicycle Stand	CONS	Construction	CONS	Installation
BcyclStnd	Bicycle Stand	REHAB	Rehabilitation	RCONS	Reconstruction
BFPRE	Backflow Preventor	CONS	Construction	CONS	Installation
BFPRE	Backflow Preventor	CONS	Construction	ESTM-REP	Estimated Replacement
BFPRE	Backflow Preventor	CONS	Construction	REPLACE	Replace

BFPRE	Backflow Preventor	REHAB	Rehabilitation	RCONS	Reconstruction
Bldg	Building	CONS	Construction	CONS	Installation
Bldg	Building	REHAB	Rehabilitation	RCONS	Reconstruction
Bnch	Bench	CONS	Construction	CONS	Installation
Bnch	Bench	REHAB	Rehabilitation	RCONS	Reconstruction
Brm	Berm	CONS	Construction	CONS	Installation
Brm	Berm	REHAB	Rehabilitation	RCONS	Reconstruction
CB	Catchbasin (Waste Water)	CONS	Construction	CONS	Installation
CB	Catchbasin (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
CB_COMB	Catchbasin (Combined)	CONS	Construction	CONS	Installation
CB_COMB	Catchbasin (Combined)	REHAB	Rehabilitation	RCONS	Reconstruction
CB_ST	Catchbasin (Storm)	CONS	Construction	CONS	Installation
CB_ST	Catchbasin (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement
CB_ST	Catchbasin (Storm)	CONS	Construction	REPLACE	Replace
CB_ST	Catchbasin (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
CH	Water Chamber	CONS	Construction	CONS	Installation
CH	Water Chamber	CONS	Construction	ESTM-REP	Estimated Replacement
CH	Water Chamber	CONS	Construction	REPLACE	Replace
CH	Water Chamber	REHAB	Rehabilitation	RCONS	Reconstruction
CONTRO	Controller	CONS	Construction	CONS	Installation
CONTRO	Controller	CONS	Construction	ESTM-REP	Estimated Replacement
CONTRO	Controller	REHAB	Rehabilitation	RCONS	Reconstruction
CPROT	Cathodic Protection	CONS	Construction	CONS	Installation
CPROT	Cathodic Protection	CONS	Construction	ESTM-REP	Estimated Replacement
CPROT	Cathodic Protection	REHAB	Rehabilitation	RCONS	Reconstruction
CRB	Curb	CONS	Construction	CONS	Installation
CRB	Curb	CONS	Construction	ESTM-REP	Estimated Replacement
CRB	Curb	CONS	Construction	REPLACE	Replace
CRB	Curb	REHAB	Rehabilitation	RCONS	Reconstruction
Crsswlk	Crosswalk	CONS	Construction	CONS	Installation
Crsswlk	Crosswalk	REHAB	Rehabilitation	RCONS	Reconstruction
DP	Detention Pond	CONS	Construction	CONS	Installation
DP	Detention Pond	CONS	Construction	ESTM-REP	Estimated Replacement
DP	Detention Pond	CONS	Construction	REPLACE	Replace
DP	Detention Pond	INSP	Inspection	CNDSRVY	Condition Survey
DP	Detention Pond	INSP	Inspection	INSP	Inspection
DP	Detention Pond	REHAB	Rehabilitation	RCONS	Reconstruction
FL_EQ	Equipment	CONS	Construction	CONS	Installation
FL_EQ	Equipment	CONS	Construction	COVER_BG	Coverage Begin
FL_EQ	Equipment	CONS	Construction	LEASE_ST	Lease Start
FL_EQ	Equipment	CONS	Construction	LIC_EXP	Lic Expires
AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
FL_EQ	Equipment	CONS	Construction	PURCH_DT	Purch Date
FL_EQ	Equipment	CONS	Construction	REPLACE	Replace
FL_EQ	Equipment	CONS	Construction	YBUILT	Year built
FL_EQ	Equipment	REHAB	Rehabilitation	RCONS	Reconstruction
FL_VC	Vehicle	CONS	Construction	CONS	Installation
FL_VC	Vehicle	CONS	Construction	COVER_BG	Coverage Begin
FL_VC	Vehicle	CONS	Construction	LEASE_ST	Lease Start
FL_VC	Vehicle	CONS	Construction	LIC_EXP	Lic Expires

FL_VC	Vehicle	CONS	Construction	PURCH_DT	Purch Date
FL_VC	Vehicle	CONS	Construction	REPLACE	Replace
FL_VC	Vehicle	CONS	Construction	YBUILT	Year built
FL_VC	Vehicle	REHAB	Rehabilitation	RCONS	Reconstruction
Fishng Bcn	Flashing Beacon	CONS	Construction	CONS	Installation
Fishng Bcn	Flashing Beacon	REHAB	Rehabilitation	RCONS	Reconstruction
GA	Grass Area	CONS	Construction	CONS	Installation
GA	Grass Area	CONS	Construction	ESTM-REP	Estimated Replacement
GA	Grass Area	REHAB	Rehabilitation	RCONS	Reconstruction
HY	Hydrant	CONS	Construction	CONS	Installation
HY	Hydrant	CONS	Construction	ESTM-REP	Estimated Replacement
HY	Hydrant	CONS	Construction	REPLACE	Replace
HY	Hydrant	INSP	Inspection	FLOWTEST	Flow Test
HY	Hydrant	REHAB	Rehabilitation	RCONS	Reconstruction
InfoDirctn	Informational & Directional Sign	CONS	Construction	CONS	Installation
InfoDirctn	Informational & Directional Sign	REHAB	Rehabilitation	RCONS	Reconstruction
IO	Inlet	CONS	Construction	CONS	Installation
IO	Inlet	CONS	Construction	ESTM-REP	Estimated Replacement
IO	Inlet	CONS	Construction	REPLACE	Replace
IO	Inlet	REHAB	Rehabilitation	RCONS	Reconstruction
LAG	Lagoon	CONS	Construction	CONS	Installation
LAG	Lagoon	CONS	Construction	ESTM-REP	Estimated Replacement
LAG	Lagoon	CONS	Construction	REPLACE	Replace
LAG	Lagoon	REHAB	Rehabilitation	RCONS	Reconstruction
LN	Waterline	CONS	Construction	CONS	Installation
LN	Waterline	CONS	Construction	ESTM-REP	Estimated Replacement
LN	Waterline	CONS	Construction	REPLACE	Replace
LN	Waterline	INSP	Inspection	INSP	Inspection
LN	Waterline	REHAB	Rehabilitation	RCONS	Reconstruction
Mdn	Median	CONS	Construction	CONS	Installation
Mdn	Median	REHAB	Rehabilitation	RCONS	Reconstruction
MH	Manhole (Waste Water)	CONS	Construction	CONS	Installation
MH	Manhole (Waste Water)	CONS	Construction	ESTM-REP	Estimated Replacement
MH	Manhole (Waste Water)	CONS	Construction	REPLACE	Replace
MH	Manhole (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
MH_COMB	Manhole (Combined)	CONS	Construction	CONS	Installation
MH_COMB	Manhole (Combined)	CONS	Construction	ESTM-REP	Estimated Replacement
MH_COMB	Manhole (Combined)	CONS	Construction	REPLACE	Replace
MH_COMB	Manhole (Combined)	REHAB	Rehabilitation	RCONS	Reconstruction
AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
MH_FM	Sanitary Forcemain Manhole	CONS	Construction	CONS	Installation
MH_FM	Sanitary Forcemain Manhole	CONS	Construction	ESTM-REP	Estimated Replacement
MH_FM	Sanitary Forcemain Manhole	CONS	Construction	REPLACE	Replace
MH_FM	Sanitary Forcemain Manhole	REHAB	Rehabilitation	RCONS	Reconstruction
MH_ST	Manhole (Storm)	CONS	Construction	CONS	Installation
MH_ST	Manhole (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement
MH_ST	Manhole (Storm)	CONS	Construction	REPLACE	Replace

MH_ST	Manhole (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
MT	Water Meter	CONS	Construction	CONS	Installation
MT	Water Meter	CONS	Construction	ESTM-REP	Estimated Replacement
MT	Water Meter	CONS	Construction	REPLACE	Replace
MT	Water Meter	REHAB	Rehabilitation	RCONS	Reconstruction
OC	Watercourse	CONS	Construction	CONS	Installation
OC	Watercourse	CONS	Construction	ESTM-REP	Estimated Replacement
OC	Watercourse	CONS	Construction	REPLACE	Replace
OC	Watercourse	REHAB	Rehabilitation	RCONS	Reconstruction
OF	Sewer Structure (Waste Water)	CONS	Construction	CONS	Installation
OF	Sewer Structure (Waste Water)	CONS	Construction	ESTM-REP	Estimated Replacement
OF	Sewer Structure (Waste Water)	CONS	Construction	REPLACE	Replace
OF	Sewer Structure (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
OF_COMB	Sewer Structure (Combined)	CONS	Construction	CONS	Installation
OF_COMB	Sewer Structure (Combined)	CONS	Construction	ESTM-REP	Estimated Replacement
OF_COMB	Sewer Structure (Combined)	CONS	Construction	REPLACE	Replace
OF_COMB	Sewer Structure (Combined)	REHAB	Rehabilitation	RCONS	Reconstruction
OF_ST	Sewer Structure (Storm)	CONS	Construction	CONS	Installation
OF_ST	Sewer Structure (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement
OF_ST	Sewer Structure (Storm)	CONS	Construction	REPLACE	Replace
OF_ST	Sewer Structure (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
OUT	Outfall	CONS	Construction	CONS	Installation
OUT	Outfall	CONS	Construction	ESTM-REP	Estimated Replacement
OUT	Outfall	REHAB	Rehabilitation	RCONS	Reconstruction
PA	Paved Area	CONS	Construction	CONS	Installation
PA	Paved Area	CONS	Construction	ESTM-REP	Estimated Replacement
PA	Paved Area	REHAB	Rehabilitation	RCONS	Reconstruction
PdstrnSgnl	Pedestrian Signal	CONS	Construction	CONS	Installation
PdstrnSgnl	Pedestrian Signal	REHAB	Rehabilitation	RCONS	Reconstruction
PedXngLght	Pedestrian Crossing Light	CONS	Construction	CONS	Installation
PedXngLght	Pedestrian Crossing Light	REHAB	Rehabilitation	RCONS	Reconstruction
PI	Pole	CONS	Construction	CONS	Installation
AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
PI	Pole	REHAB	Rehabilitation	RCONS	Reconstruction
PlntArea	Planted Area	CONS	Construction	CONS	Installation
PlntArea	Planted Area	REHAB	Rehabilitation	RCONS	Reconstruction
PrkgAr	Parking Area	CONS	Construction	CONS	Installation
PrkgAr	Parking Area	REHAB	Rehabilitation	RCONS	Reconstruction
PS	Pumpstation (Waste Water)	CONS	Construction	CONS	Installation
PS	Pumpstation (Waste Water)	CONS	Construction	ESTM-REP	Estimated Replacement
PS	Pumpstation (Waste Water)	CONS	Construction	REPLACE	Replace
PS	Pumpstation (Waste Water)	INSP	Inspection	CNDSRVY	Condition Survey
PS	Pumpstation (Waste	INSP	Inspection	INSP	Inspection

	Water)				
PS	Pumpstation (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
PS_COMB	Pumpstation (Combined)	CONS	Construction	CONS	Installation
PS_COMB	Pumpstation (Combined)	CONS	Construction	ESTM-REP	Estimated Replacement
PS_COMB	Pumpstation (Combined)	CONS	Construction	REPLACE	Replace
PS_COMB	Pumpstation (Combined)	REHAB	Rehabilitation	RCONS	Reconstruction
PS_ST	Pumpstation (Storm)	CONS	Construction	CONS	Installation
PS_ST	Pumpstation (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement
PS_ST	Pumpstation (Storm)	CONS	Construction	REPLACE	Replace
PS_ST	Pumpstation (Storm)	INSP	Inspection	CNDSRVY	Condition Survey
PS_ST	Pumpstation (Storm)	INSP	Inspection	INSP	Inspection
PS_ST	Pumpstation (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
RecArea	Recreation Area	CONS	Construction	CONS	Installation
RecArea	Recreation Area	REHAB	Rehabilitation	RCONS	Reconstruction
Rndbt	Roundabout (Traffic Circle)	CONS	Construction	CONS	Installation
Rndbt	Roundabout (Traffic Circle)	REHAB	Rehabilitation	RCONS	Reconstruction
RS	Water Reservoir	CONS	Construction	CONS	Installation
RS	Water Reservoir	CONS	Construction	ESTM-REP	Estimated Replacement
RS	Water Reservoir	CONS	Construction	REPLACE	Replace
RS	Water Reservoir	REHAB	Rehabilitation	RCONS	Reconstruction
SD	Sewer Device (Waste Water)	CONS	Construction	CONS	Installation
SD	Sewer Device (Waste Water)	CONS	Construction	ESTM-REP	Estimated Replacement
SD	Sewer Device (Waste Water)	CONS	Construction	REPLACE	Replace
SD	Sewer Device (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
SD_COMB	Sewer Device (Combined)	CONS	Construction	CONS	Installation
SD_COMB	Sewer Device (Combined)	CONS	Construction	ESTM-REP	Estimated Replacement
SD_COMB	Sewer Device (Combined)	CONS	Construction	REPLACE	Replace

AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
SD_COMB	Sewer Device (Combined)	REHAB	Rehabilitation	RCONS	Reconstruction
SD_ST	Sewer Device (Storm)	CONS	Construction	CONS	Installation
SD_ST	Sewer Device (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement
SD_ST	Sewer Device (Storm)	CONS	Construction	REPLACE	Replace
SD_ST	Sewer Device (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
SDK	Sidewalk	CONS	Construction	CONS	Installation
SDK	Sidewalk	CONS	Construction	ESTM-REP	Estimated Replacement
SDK	Sidewalk	CONS	Construction	REPLACE	Replace
SDK	Sidewalk	REHAB	Rehabilitation	RCONS	Reconstruction
Shrb	Shrub	CONS	Construction	CONS	Installation
Shrb	Shrub	REHAB	Rehabilitation	RCONS	Reconstruction
SJ	Sewer Junction	CONS	Construction	CONS	Installation
SJ	Sewer Junction	CONS	Construction	ESTM-REP	Estimated Replacement
SJ	Sewer Junction	CONS	Construction	REPLACE	Replace
SJ	Sewer Junction	REHAB	Rehabilitation	RCONS	Reconstruction
SL	Sewerline (Waste Water)	CONS	Construction	CONS	Installation
SL	Sewerline (Waste Water)	CONS	Construction	ESTM-REP	Estimated Replacement
SL	Sewerline (Waste Water)	CONS	Construction	REPLACE	Replace
SL	Sewerline (Waste Water)	INSP	Inspection	INSP	Inspection
SL	Sewerline (Waste Water)	NEEDSTUDY	Needs Study	NEEDSTUDY	Need Study
SL	Sewerline (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
SL	Sewerline (Waste Water)	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction
SL_COMB	Sewerline (Combined)	CONS	Construction	CONS	Installation
SL_COMB	Sewerline (Combined)	CONS	Construction	ESTM-REP	Estimated Replacement
SL_COMB	Sewerline (Combined)	CONS	Construction	REPLACE	Replace
SL_COMB	Sewerline (Combined)	INSP	Inspection	INSP	Inspection
SL_COMB	Sewerline (Combined)	NEEDSTUDY	Needs Study	NEEDSTUDY	Need Study
SL_COMB	Sewerline (Combined)	REHAB	Rehabilitation	RCONS	Reconstruction
SL_COMB	Sewerline (Combined)	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction
SL_FM	Sanitary Forcemain	CONS	Construction	CONS	Installation
SL_FM	Sanitary Forcemain	CONS	Construction	ESTM-REP	Estimated Replacement
SL_FM	Sanitary Forcemain	CONS	Construction	REPLACE	Replace
SL_FM	Sanitary Forcemain	REHAB	Rehabilitation	RCONS	Reconstruction
SL_ST	Sewerline (Storm)	CONS	Construction	CONS	Installation
SL_ST	Sewerline (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement
SL_ST	Sewerline (Storm)	CONS	Construction	REPLACE	Replace
SL_ST	Sewerline (Storm)	INSP	Inspection	INSP	Inspection
SL_ST	Sewerline (Storm)	NEEDSTUDY	Needs Study	NEEDSTUDY	Need Study
SL_ST	Sewerline (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
SL_ST	Sewerline (Storm)	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction
SMCULVERT	Sewer Culvert	CONS	Construction	CONS	Installation
SMCULVERT	Sewer Culvert	CONS	Construction	ESTM-REP	Estimated Replacement
SMCULVERT	Sewer Culvert	CONS	Construction	REPLACE	Replace
SMCULVERT	Sewer Culvert	REHAB	Rehabilitation	RCONS	Reconstruction
SN	Traffic Sign	CONS	Construction	CONS	Installation
SN	Traffic Sign	CONS	Construction	ESTM-REP	Estimated Replacement
SN	Traffic Sign	REHAB	Rehabilitation	RCONS	Reconstruction
AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
SS	Sewer Service (Waste	CONS	Construction	CONNECT	Service Connected

	Water)				
SS	Sewer Service (Waste Water)	CONS	Construction	CONS	Installation
SS	Sewer Service (Waste Water)	CONS	Construction	ESTM-REP	Estimated Replacement
SS	Sewer Service (Waste Water)	CONS	Construction	REPLACE	Replace
SS	Sewer Service (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
SS	Sewer Service (Waste Water)	REHAB	Rehabilitation	REPAIR	Repair / Maint
SS_ST	Sewer Service (Storm)	CONS	Construction	CONNECT	Service Connected
SS_ST	Sewer Service (Storm)	CONS	Construction	CONS	Installation
SS_ST	Sewer Service (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement
SS_ST	Sewer Service (Storm)	CONS	Construction	REPLACE	Replace
SS_ST	Sewer Service (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
SS_ST	Sewer Service (Storm)	REHAB	Rehabilitation	REPAIR	Repair / Maint
ST	Street Light	CONS	Construction	CONS	Installation
ST	Street Light	CONS	Construction	ESTM-REP	Estimated Replacement
ST	Street Light	REHAB	Rehabilitation	RCONS	Reconstruction
SUMP	Sump	CONS	Construction	CONS	Installation
SUMP	Sump	CONS	Construction	ESTM-REP	Estimated Replacement
SUMP	Sump	REHAB	Rehabilitation	RCONS	Reconstruction
SURFWATER	Surface Water	CONS	Construction	CONS	Installation
SURFWATER	Surface Water	CONS	Construction	ESTM-REP	Estimated Replacement
SURFWATER	Surface Water	REHAB	Rehabilitation	RCONS	Reconstruction
	Storm Water Management Facility (Waste Water)				
SWMF	Storm Water Management Facility (Waste Water)	CONS	Construction	CONS	Installation
	Storm Water Management Facility (Waste Water)				
SWMF	Storm Water Management Facility (Waste Water)	CONS	Construction	ESTM-REP	Estimated Replacement
	Storm Water Management Facility (Waste Water)				
SWMF	Storm Water Management Facility (Waste Water)	REHAB	Rehabilitation	RCONS	Reconstruction
	Storm Water Management Facility (Combined)				
SWMF_COMB	Storm Water Management Facility (Combined)	CONS	Construction	CONS	Installation
	Storm Water Management Facility (Combined)				
SWMF_COMB	Storm Water Management Facility (Combined)	CONS	Construction	ESTM-REP	Estimated Replacement
	Storm Water Management Facility (Combined)				
SWMF_COMB	Storm Water Management Facility (Combined)	REHAB	Rehabilitation	RCONS	Reconstruction
	Storm Water Management Facility (Storm)				
SWMF_ST	Storm Water Management Facility (Storm)	CONS	Construction	CONS	Installation
	Storm Water Management Facility (Storm)				
SWMF_ST	Storm Water Management Facility (Storm)	CONS	Construction	ESTM-REP	Estimated Replacement

AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
SWMF_ST	Storm Water Management Facility (Storm)	REHAB	Rehabilitation	RCONS	Reconstruction
TI	Traffic Island	CONS	Construction	CONS	Installation
TI	Traffic Island	CONS	Construction	ESTM-REP	Estimated Replacement
TI	Traffic Island	REHAB	Rehabilitation	RCONS	Reconstruction
TR	Treatment Plant	CONS	Construction	CONS	Installation
TR	Treatment Plant	CONS	Construction	ESTM-REP	Estimated Replacement
TR	Treatment Plant	CONS	Construction	REPLACE	Replace
TR	Treatment Plant	INSP	Inspection	CNDSRVY	Condition Survey
TR	Treatment Plant	INSP	Inspection	INSP	Inspection
TR	Treatment Plant	REHAB	Rehabilitation	RCONS	Reconstruction
TRACKAGE	Trackage	CONS	Construction	CONS	Installation
TRACKAGE	Trackage	CONS	Construction	REPLACE	Replace
TRACKAGE	Trackage	REHAB	Rehabilitation	RCONS	Reconstruction
TrafSigCab	Traffic Signal Cabinet	CONS	Construction	CONS	Installation
TrafSigCab	Traffic Signal Cabinet	REHAB	Rehabilitation	RCONS	Reconstruction
TRBUS	Transit Vehicle	CONS	Construction	CONS	Installation
TRBUS	Transit Vehicle	CONS	Construction	MFR_YEAR	Year of Manufacture
TRBUS	Transit Vehicle	CONS	Construction	PREPARE	Prepare
TRBUS	Transit Vehicle	CONS	Construction	PURCHASE	Purchase
TRBUS	Transit Vehicle	CONS	Construction	REPLACE	Replace
TRBUS	Transit Vehicle	REHAB	Rehabilitation	MOH	Major Overhaul
TRBUS	Transit Vehicle	REHAB	Rehabilitation	RCONS	Reconstruction
TRBUS	Transit Vehicle	REHAB	Rehabilitation	REFURBISH	Refurbish
TREE	Tree	CONS	Construction	CONS	Installation
TREE	Tree	REHAB	Rehabilitation	RCONS	Reconstruction
TRGARG	Garage	CONS	Construction	CONS	Installation
TRGARG	Garage	CONS	Construction	REPLACE	Replace
TRGARG	Garage	REHAB	Rehabilitation	RCONS	Reconstruction
TRGARG	Garage	REHAB	Rehabilitation	REHAB	Rehabilitation or Reconstruction
TRPARKING	Commuter Parking Lot	CONS	Construction	CONS	Installation
TRPARKING	Commuter Parking Lot	CONS	Construction	REPLACE	Replace
TRPARKING	Commuter Parking Lot	CONS	Construction	YBUILT	Year built
TRPARKING	Commuter Parking Lot	REHAB	Rehabilitation	RCONS	Reconstruction
TRRAIL	Subway/Streetcar	CONS	Construction	CONS	Installation
TRRAIL	Subway/Streetcar	CONS	Construction	MFR_YEAR	Year of Manufacture
TRRAIL	Subway/Streetcar	CONS	Construction	REPLACE	Replace
TRRAIL	Subway/Streetcar	REHAB	Rehabilitation	MOH	Major Overhaul
TRRAIL	Subway/Streetcar	REHAB	Rehabilitation	RCONS	Reconstruction
TRSHELTER	Bus Shelter	CONS	Construction	CONS	Installation
TRSHELTER	Bus Shelter	CONS	Construction	REPLACE	Replace
TRSHELTER	Bus Shelter	REHAB	Rehabilitation	RCONS	Reconstruction
TrSigDsply	Traffic Signal Display	CONS	Construction	CONS	Installation
TrSigDsply	Traffic Signal Display	REHAB	Rehabilitation	RCONS	Reconstruction
TRTERM	Bus Terminal	CONS	Construction	CONS	Installation
TRTERM	Bus Terminal	CONS	Construction	REPLACE	Replace
TRTERM	Bus Terminal	REHAB	Rehabilitation	RCONS	Reconstruction
AssetTypeCode	DESCR	LCECatCode	LCECatDesc	LCETypeCode	LCEDesc
TS	Traffic Signal	CONS	Construction	CONS	Installation

TS	Traffic Signal	CONS	Construction	ESTM-REP	Estimated Replacement
TS	Traffic Signal	REHAB	Rehabilitation	RCONS	Reconstruction
TSCB	Traffic Signal Control Box	CONS	Construction	CONS	Installation
TSCB	Traffic Signal Control Box	REHAB	Rehabilitation	RCONS	Reconstruction
VehDetSys	Vehicle Detection System	CONS	Construction	CONS	Installation
VehDetSys	Vehicle Detection System	REHAB	Rehabilitation	RCONS	Reconstruction
WA	Warning Light	CONS	Construction	CONS	Installation
WA	Warning Light	CONS	Construction	ESTM-REP	Estimated Replacement
WA	Warning Light	REHAB	Rehabilitation	RCONS	Reconstruction
WasteRcptc	Waste Receptacle	CONS	Construction	CONS	Installation
WasteRcptc	Waste Receptacle	REHAB	Rehabilitation	RCONS	Reconstruction
WC	Watercourse Structure	CONS	Construction	CONS	Installation
WC	Watercourse Structure	CONS	Construction	ESTM-REP	Estimated Replacement
WC	Watercourse Structure	CONS	Construction	REPLACE	Replace
WC	Watercourse Structure	REHAB	Rehabilitation	RCONS	Reconstruction
WD	Water Device	CONS	Construction	CONS	Installation
WD	Water Device	CONS	Construction	ESTM-REP	Estimated Replacement
WD	Water Device	CONS	Construction	REPLACE	Replace
WD	Water Device	REHAB	Rehabilitation	RCONS	Reconstruction
WJ	Water Junction	CONS	Construction	CONS	Installation
WJ	Water Junction	CONS	Construction	ESTM-REP	Estimated Replacement
WJ	Water Junction	CONS	Construction	REPLACE	Replace
WJ	Water Junction	REHAB	Rehabilitation	RCONS	Reconstruction
WL	Water Well	CONS	Construction	CONS	Installation
WL	Water Well	CONS	Construction	ESTM-REP	Estimated Replacement
WL	Water Well	CONS	Construction	REPLACE	Replace
WL	Water Well	REHAB	Rehabilitation	RCONS	Reconstruction
WS	Water Service	CONS	Construction	ACTIVE	Service Activation
WS	Water Service	CONS	Construction	CONS	Installation
WS	Water Service	CONS	Construction	ESTM-REP	Estimated Replacement
WS	Water Service	CONS	Construction	REPLACE	Replace
WS	Water Service	REHAB	Rehabilitation	RCONS	Reconstruction
WS	Water Service	REHAB	Rehabilitation	REPAIR	Repair / Maint
WV	Water Valve	CONS	Construction	CONS	Installation
WV	Water Valve	CONS	Construction	ESTM-REP	Estimated Replacement
WV	Water Valve	CONS	Construction	REPLACE	Replace
WV	Water Valve	REHAB	Rehabilitation	RCONS	Reconstruction

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